OPEN WIRE POLE TOP ASSEMBLY UNITS

CONTENTS

1. GENERAL

1.01 This section is intended to provide REA borrowers, consulting engineers, contractors, and other interested parties with technical information for use in the design and construction of REA borrowers' telephone systems. It discusses in particular the open wire pole top assembly units that are designed to meet the various situations encountered in the construction of open wire plant.

1.02 This section replaces REA TE & CM-625, Issue No. 5, dated December 1960. The section is revised to bring it into conformity with the issue of REA Form 511, "Telephone System Construction Contract," dated March 1962.

1.03 Additions include steel brackets for supporting insulated open wires, (PA1-6 and PA2-4 units); new single and buckarm two-pin deadend crossarms (Type DEP) (PB1-6 and PB1-7 units); single and double four-pin crossarms (Type 6C) for eight insulated open wires (PB4-1 and PB4-2 units); single and double crossarms (Type 10C) drilled for supporting twelve insulated open wires (PB6-1 and PB6-2); two single crossarms (Type DETE) drilled for deadending twelve insulated open wires (PB6-7); one single crossarm (Type DETE) drilled for deadending twelve insulated open wires (PB6-8 units); pin and insulator (T-2A unit); pins and insulators (T-2S unit); 2-point

pin, insulator and bracket assembly for insulated open wires (T-21 unit); and 4-point transposition bracket for insulated open wires (T-22 unit).

1.04 Minor changes were made in some units and 1962 dates are shown on their drawings.

1.05 In the construction of a telephone system several different pole top assembly units may be required on a pole in order to make a complete structure. The units have been established so that the required assemblies may be readily specified and combined as needed. In certain unusual situations it may be necessary for the engineer to prepare guide drawings to illustrate the placement of the various assembly units on a pole but these situations should be rare.

1.06 Each pole top assembly unit has definite design load limitations based on the inherent strength of its individual components. The design loads indicated for the various assembly units are based on the maximum vertical load, the maximum transverse (horizontal) load or the longitudinal load in the direction of the line, whichever governs, to which they may be subjected.

1.07 Pins and insulators are stressed by the transverse (horizontal) and longitudinal (in-line) loads more than by the vertical loads. Deadend crossarms are stressed chiefly by the longitudinal (in-line) loads. The design load limits established for the various assembly units occur when the supported conductors are subjected to storm loads as defined in the Sixth Edition of the National Electrical Safety Code (NESC) and stated in REA TE & CM-615, "Desigr of Bare Open Wire Plant." The vertical load is due to the weight of the conductor plus the weight of the ice, when specified. The transverse loads at corners in the line and the loads at deadends are due to the tension of the conductors in the presence of code loadings. Data are available from the various conductor manufacturers which indicate the pull or load of the conductors at various line angles (corners) and at deadends. The data are based on the tension of the conductors that would occur for various span lengths when the conductor is subjected to code loading in the heavy, medium, or light loading districts. Attention is called to the fact that the data available from the wire manufacturers indicate the load on the basis of a pair of conductors whereas the loads indicated in this section are on a <u>per conductor</u> basis and the loadings in the heavy, medium, and light loading districts are calculated as required by the NESC for 0°, 15°, and 30°F, respectively for these districts.

1.08 Wire Loads: Chart 1 is included to give vertical wire load information for use in judging whether a particular pole top unit is strong enough to support the load. The chart shows the vertical loads for wires in the heavy, medium, and light storm loading districts. The data are for spans where the poles are of the same height and on level ground. It is assumed in this case that a pole supports the load of a half span in each direction from it, in tangent construction. Where one pole supports its load at a higher level than the two adjacent poles, it will be supporting the load of more than the two half spans in each direction from it; and some assumption of load increase may be advisable if the difference in pole height is great. Where the poles are in a line going up a long grade, the load per pole will be about the same on each pole and equal to the load on one span if the spans are nearly equal.

2. ASSEMBLY UNITS ON EXISTING POLES (N Units)

2.01 Crossarm type pole top assembly units shall have a prefix N applied to them if they are to be placed on existing poles carrying electric, telephone, or other service.

3. INSULATED LINE WIRE ASSEMBLY UNITS

Fig. 1, PA1-6, Single Steel Support Bracket
Fig. 2, PA2-4, Double Steel Support Bracket
Fig. 3, PB4-1, Single Four-pin Crossarm (Type 6C)
Fig. 4, PB4-2, Double Four-pin Crossarm (Type 6C)
Fig. 5, PB6-1, Single Six-pin Crossarm (Type 10C)
Fig. 6, PB6-2, Double Six-pin Crossarm (Type 10C)
Fig. 7, PB6-7, Deadend, Two Single Crossarms (Type DETE) (Buckarm)
Fig. 8, PB6-8, Deadend, Single Crossarm (Type DETE)
Fig. 9, T-21, Two-point Bracket
Fig. 10, T-22, Four-point Transposition Bracket
Fig. 11, Insulated Wire Supports on Double Armed Pole
Fig. 12, Insulated Wire Supports on Double Steel Support Bracket

4. BARE WIRE CROSSARM ASSEMBLY UNITS

Fig. 13, PB1-1A, Two-pin Crossarm (Type 2A)
Fig. 14, PB1-2, Double Two-pin Crossarm (Type 2A)
Fig. 15, PB1-3, Two-pin Crossarm (Type 2A) (With Brace)
Fig. 16, PB1-4, Single Two-pin Sidearm (Type 2B)
Fig. 17, PB1-5, Double Two-pin Sidearm (Type 2B)
Fig. 18, PB1-6, Deadend, Single Crossarm (Type DEP)

Fig. 19, PB1-7, Deadend, Two Single Crossarms (Type DEP) (Buckarm)
Fig. 20, PB3-1, Single Six-pin Crossarm (Type 6A)
Fig. 21, PB3-2, Double Six-pin Crossarm (Type 6A)
Fig. 22, PB3-3, Single Six-pin Crossarm (Type 6B)
Fig. 23, PB3-4, Double Six-pin Crossarm (Type 6B)
Fig. 24, PB3-7, Single Six-pin Sidearm (Type 6A)
Fig. 25, PB3-8, Two Single Six-pin Sidearms (Type 6A)
Fig. 26, PB5-1, Single Ten-pin Crossarm (Type 10A)
Fig. 27, PB5-2, Double Ten-pin Crossarm (Type 10A)
Fig. 28, PB5-3, Single Ten-pin Crossarm (Type 10B)
Fig. 29, PB5-4, Double Ten-pin Crossarm (Type 10B)
Fig. 30, PB5-5, Deadend, Two Single Crossarms (Type DE) (Buckarm)
Fig. 31, PB5-6, Deadend, Single Crossarm (Type DE)
Fig. 32, PB5-7, Deadend, Two Single Crossarms (Type DET) (Buckarm)
Fig. 33, PB5-8, Deadend, Single Crossarm (Type DET)
Fig. 34, PB5-9 Single Ten-pin Sidearm (Type 10A)
Fig. 35, PB5-10, Two Single Ten-pin Sidearms (Type 10A)
Fig. 36, PB5-11, -12, -14, Deadends Single Crossarm (Types DETA, DETB, DETD)
Fig. 37, PB5-15, Deadend, Single Crossarm (Type DETC) H Frame
Fig. 38, PB5-16, -17, -18, -19, Deadend, Two Single Crossarms (Types DETA, DETB, DETC, DETD) (Buckarm)

5. MISCELLANEOUS ASSEMBLY UNIT

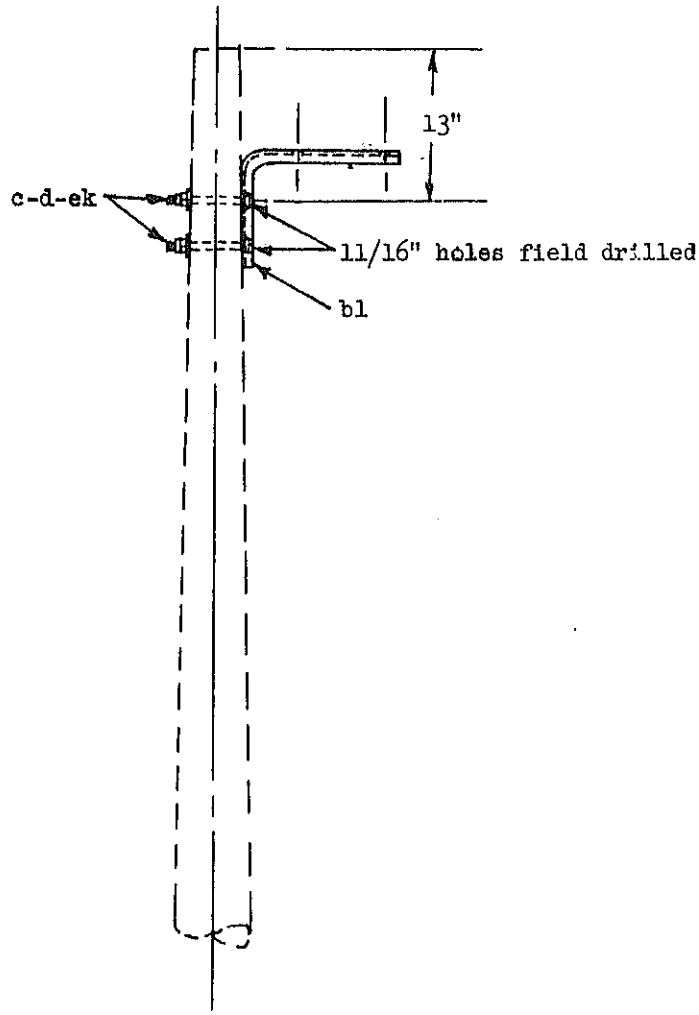
Fig. 39, PM1, Pole Lightning Protection Assembly
Fig. 40, PM2, Pole Ground Assembly
Fig. 41, PM2B, Aerial Ground Wire Assembly
Fig. 42, PM3, Pole Top Extension
Fig. 43, PM10, Metal Pole Gain
Fig. 44, PM14, Push Brace Accessories
Fig. 45, PM52, -1, -2, Pole Marking
Fig. 46, P3-1, -5, Lightning Arresters (Single and Five Pairs)
Fig. 47, P4-1, Open Wire Power Contact Protector (Single Pair)
Fig. 48, P4-5, Open Wire Power Contact Protector (Five Pairs)
Fig. 49, P5-1, Drainage Unit (Capacitor-Resistor Type) Nonjoint Use
Fig. 50, P6-1A, Drainage Unit (Inductor-Capacitor Type) Joint Use, (Connection to Ground Rod)
Fig. 51, P6-1C, Drainage Unit (Inductor-Capacitor Type) Joint Use (Connection to MGN)

6. PINS, INSULATORS, TRANSPOSITION BRACKETS AND CLEVISES

Fig. 52, T-1, T-2, T-2A, Pin and Insulator Units
Fig. 53, T-2S, T-3, T-3A, Pin and Transposition Insulator Units
Fig. 54, T-5, Two-wire Flat Deadend (Clevises)
Fig. 55, T-5A, Double Two-wire Flat Deadend (Clevises)

Fig. 56, T-6, Tandem Transposition (Type B, Light Duty)
Fig. 57, T-7, Tandem Transposition (Type C, Heavy Duty)
Fig. 58, T-18, T-19, Reinforced Heavy Duty Point Transposition Brackets
Fig. 59, T-20, Reinforced Heavy Duty Point Transposition Bracket

Note: Assembly Unit drawings herein are reproductions of these drawings as shown in REA Form 511, dated March 1962.

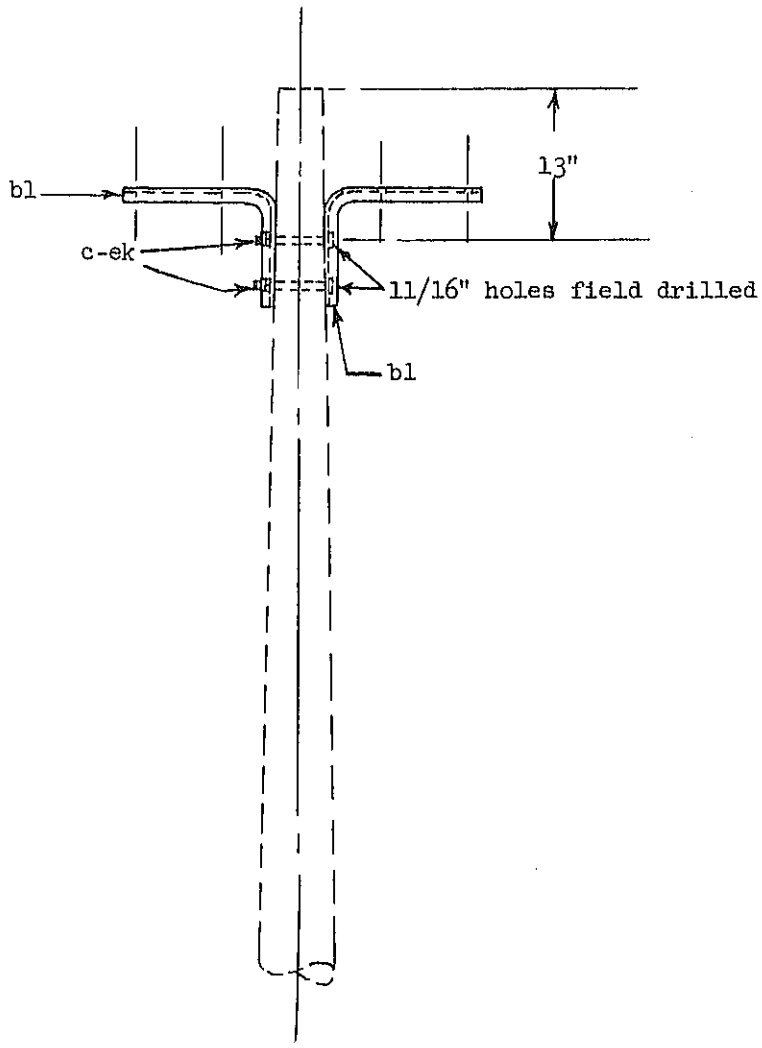


Note 1: Use for corners from 0° to 20°.

USED ON NON-JOINT OR JOINT TANGENT OR CORNER POLES FOR 4 INCH SPACED INSULATED OPEN WIRE USING THE T-2S UNIT FOR WIRE ATTACHMENTS. SEE FIGURES 10 AND 12 FOR WIRE ATTACHMENT METHODS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES SINGLE STEEL SUPPORT BRACKET	
Scale: NTS		January 18, 1962 PA1-6

Figure 1

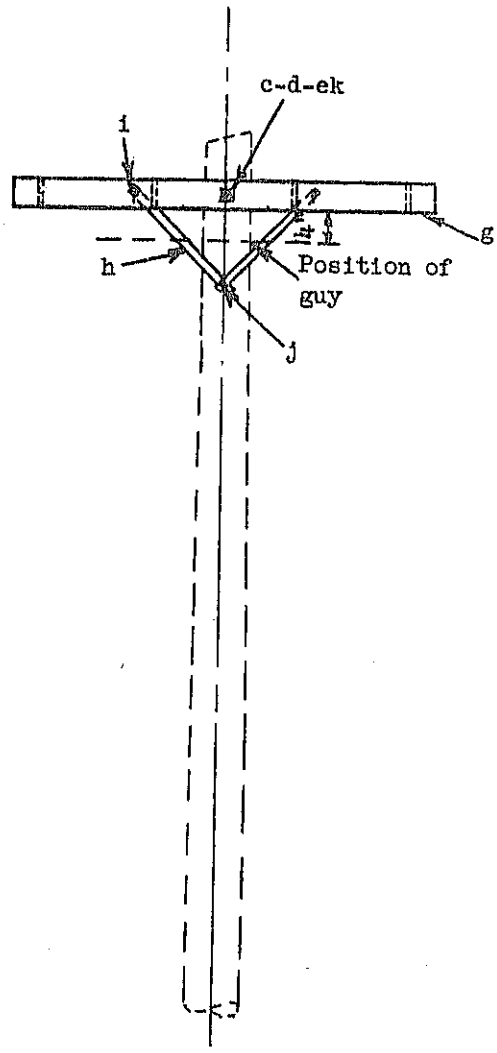


Note: Use for corners from 0° to 20°.

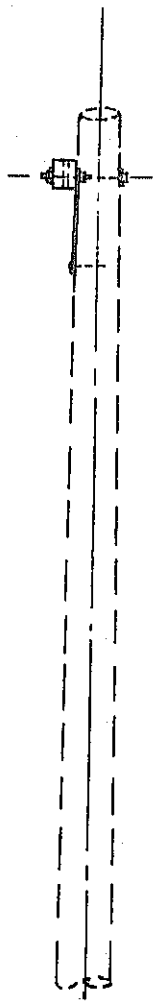
USED ON NON-JOINT TANGENT OR CORNER POLES FOR 4-INCH SPACED INSULATED OPEN WIRE USING THE T-2S PIN AND INSULATOR UNITS OR THE T-22 STEEL BRACKET UNIT FOR WIRE ATTACHMENTS. SEE FIGURES 10 AND 12 FOR WIRE ATTACHMENT METHODS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES DOUBLE STEEL SUPPORT BRACKET	
Scale: NTS		January 18, 1962 PA2-4

Figure 2



Elevation



Side Elevation

USED ON NON-JOINT OR JOINT TANGENT OR CORNER POLES FOR 4-INCH SPACED INSULATED OPEN WIRE USING T-21 OR T-22 STEEL BRACKET UNITS FOR WIRE ATTACHMENTS. LIMITATIONS: CORNERS 0 TO 35 DEGREES; 225 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR: AND 10 PERCENT MAXIMUM DOWNWARD GRADE CHANGE. SEE FIGURES 9 AND 10 FOR WIRE ATTACHMENT METHODS.

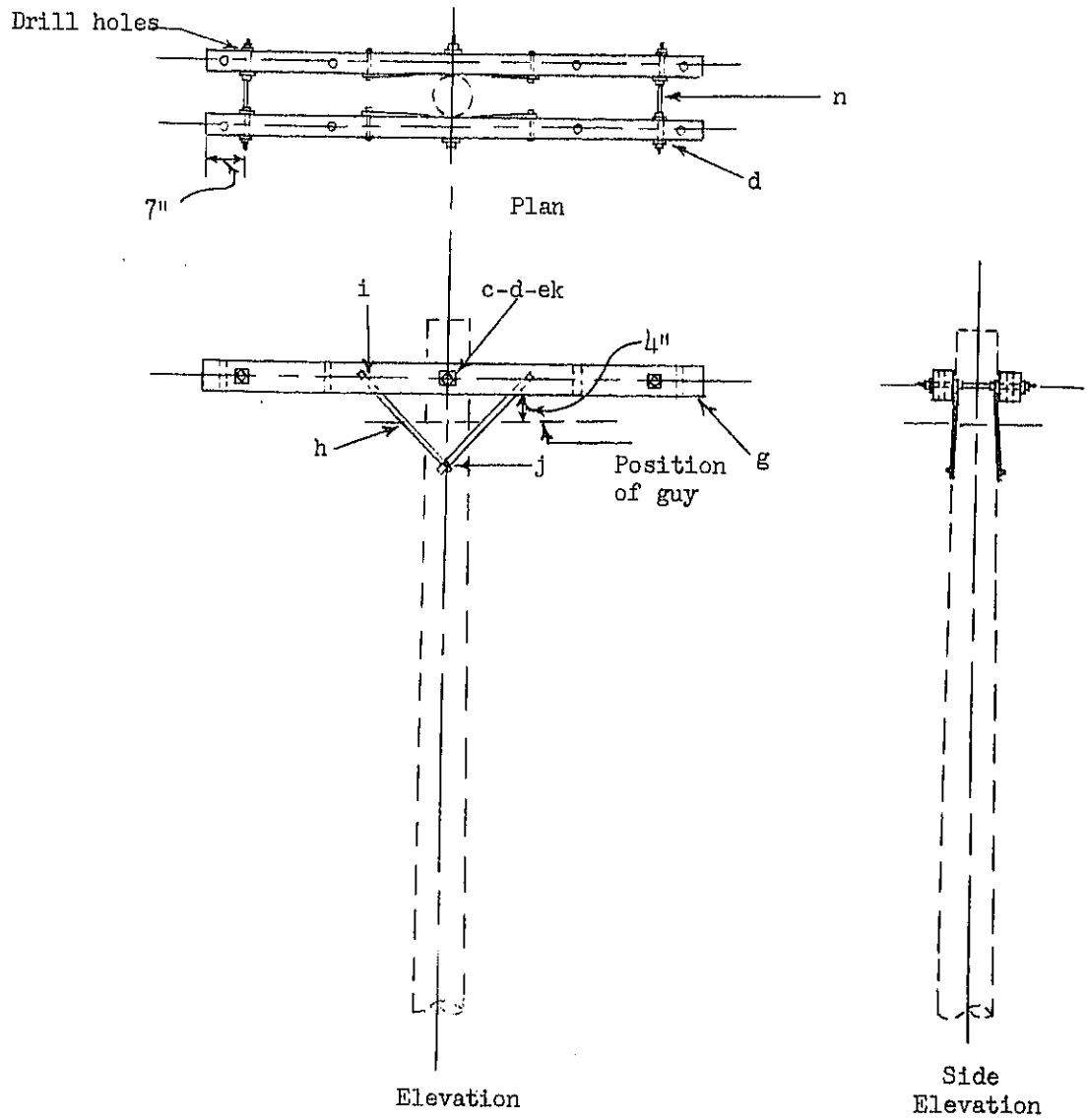
RURAL TELEPHONE CONSTRUCTION PRACTICES
SINGLE FOUR-PIN CROSSARM (TYPE 6C)
(INSULATED OPEN WIRE CONSTRUCTION)

SCALE: NTS

March 5, 1962

PB4-1

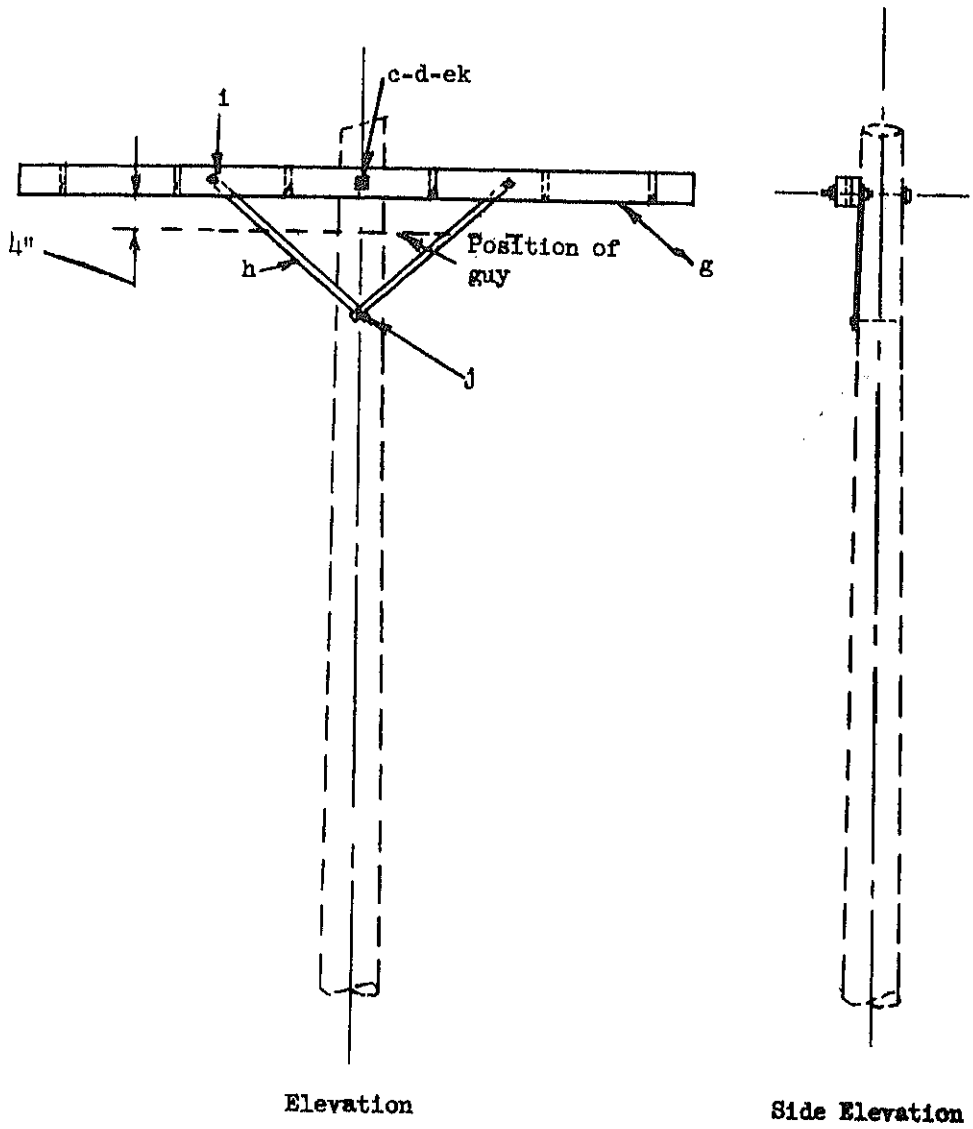
Figure 3



USED ON NON-JOINT OR JOINT TANGENT OR CORNER POLES FOR 4-INCH SPACED INSULATED OPEN WIRE USING T-21 STEEL BRACKET UNITS FOR WIRE ATTACHMENTS; AT ALL RAILROAD AND RIVER CROSSINGS IN SUCH LINES: AND AT DOWNWARD GRADE CHANGES EXCEEDING 10 PERCENT. LIMITATIONS: CORNERS 35 TO 60 DEGREES; VERTICAL LOAD PER CONDUCTOR 450 LBS.; AND 25 PERCENT MAXIMUM DOWNWARD GRADE CHANGE. SEE FIGURE 11 FOR WIRE ATTACHMENT METHODS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES DOUBLE FOUR PIN CROSSARM (TYPE 6C) (INSULATED OPEN WIRE CONSTRUCTION)	
	Scale: NTS	February 24, 1962
		PB4-2

Figure 4



Elevation

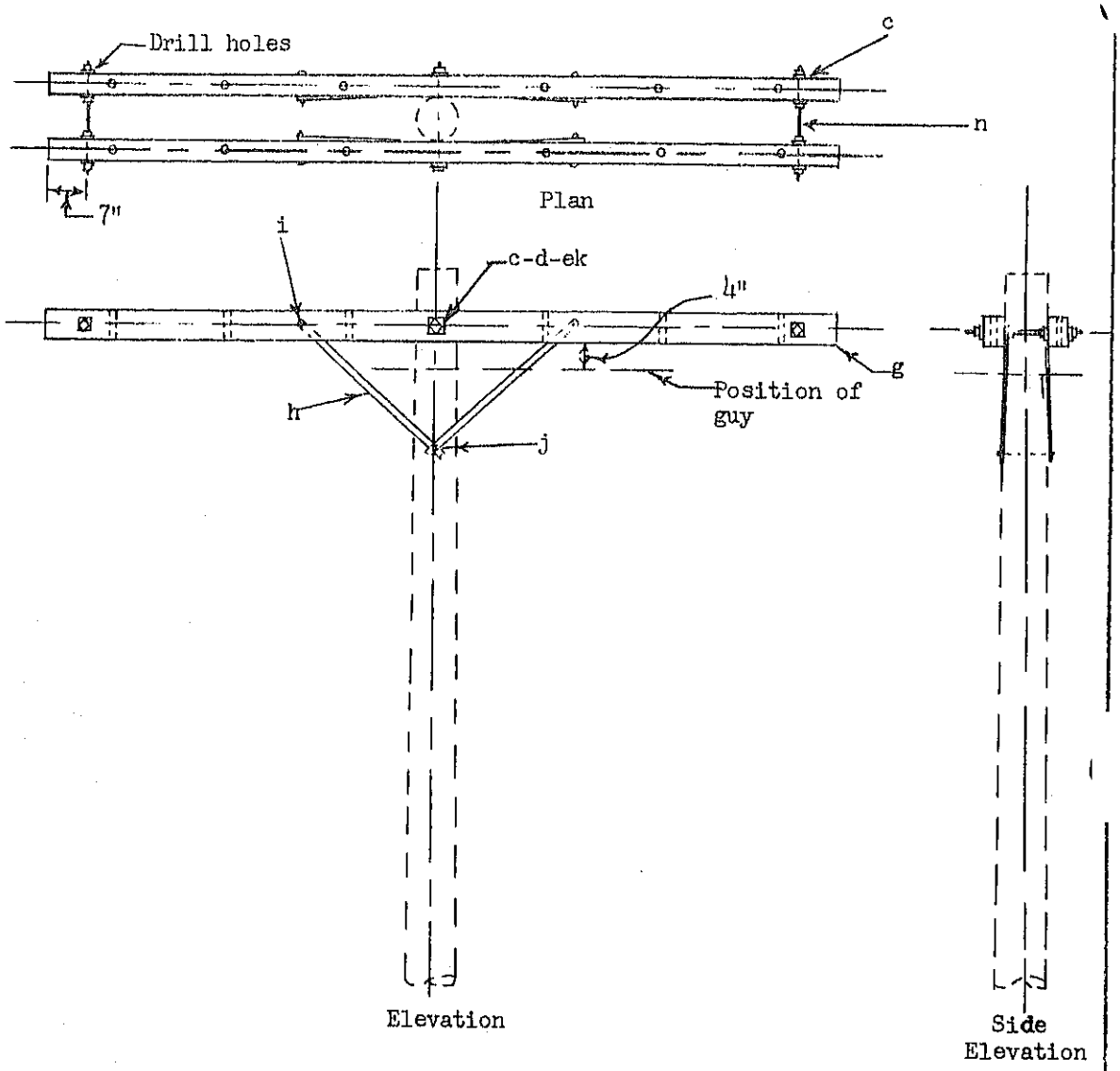
Side Elevation

USED ON NON-JOINT OR JOINT TANGENT OR CORNER POLES FOR 4-INCH SPACED INSULATED OPEN WIRE USING T-21 AND T-22 STEEL BRACKET UNITS FOR WIRE ATTACHMENTS. LIMITATIONS: CORNERS 0 TO 35 DEGREES; 225 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR; AND 10 PERCENT MAXIMUM DOWNWARD GRADE CHANGE. SEE FIGURES 9 AND 10 FOR WIRE ATTACHMENT METHODS.

RURAL TELEPHONE CONSTRUCTION PRACTICES
SINGLE SIX-PIN CROSSARM, (TYPE 10C)
(INSULATED OPEN WIRE CONSTRUCTION)

SCALE: NTS		February 20, 1962
		PB6-1

Figure 5



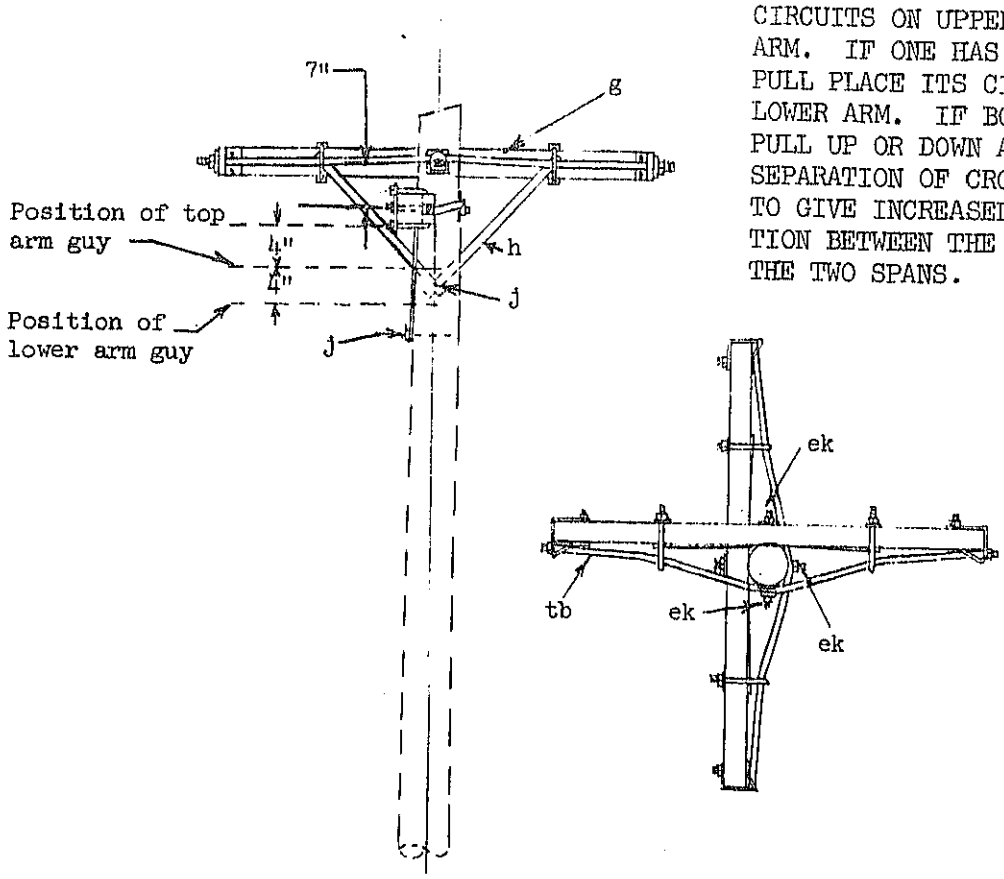
USED ON NON-JOINT OR JOINT TANGENT OR CORNER POLES FOR 4 INCH SPACED INSULATED OPEN WIRE USING T-21 STEEL BRACKET UNITS FOR WIRE ATTACHMENTS; AT ALL RAILROAD AND RIVER CROSSINGS; AND AT DOWNWARD GRADE CHANGES EXCEEDING 10 PERCENT. LIMITATIONS: CORNERS 35 TO 60 DEGREES: MAXIMUM VERTICAL LOAD PER CONDUCTOR 450 LBS.; AND 25 PERCENT MAXIMUM DOWNWARD GRADE CHANGE. SEE FIGURE 11 FOR WIRE ATTACHMENT METHODS.

RURAL TELEPHONE CONSTRUCTION PRACTICES
DOUBLE SIX PIN CROSSARM (TYPE 10C)
(INSULATED OPEN WIRE CONSTRUCTION)

Scale: NTS		February 24, 1962
		PB6-2

Figure 6

WHERE ONE OF THE TWO SPANS HAS AN UP-PULL PLACE ITS CIRCUITS ON UPPER CROSS-ARM. IF ONE HAS A DOWN-PULL PLACE ITS CIRCUITS ON LOWER ARM. IF BOTH SPANS PULL UP OR DOWN ADJUST SEPARATION OF CROSSARMS TO GIVE INCREASED SEPARATION BETWEEN THE WIRES IN THE TWO SPANS.



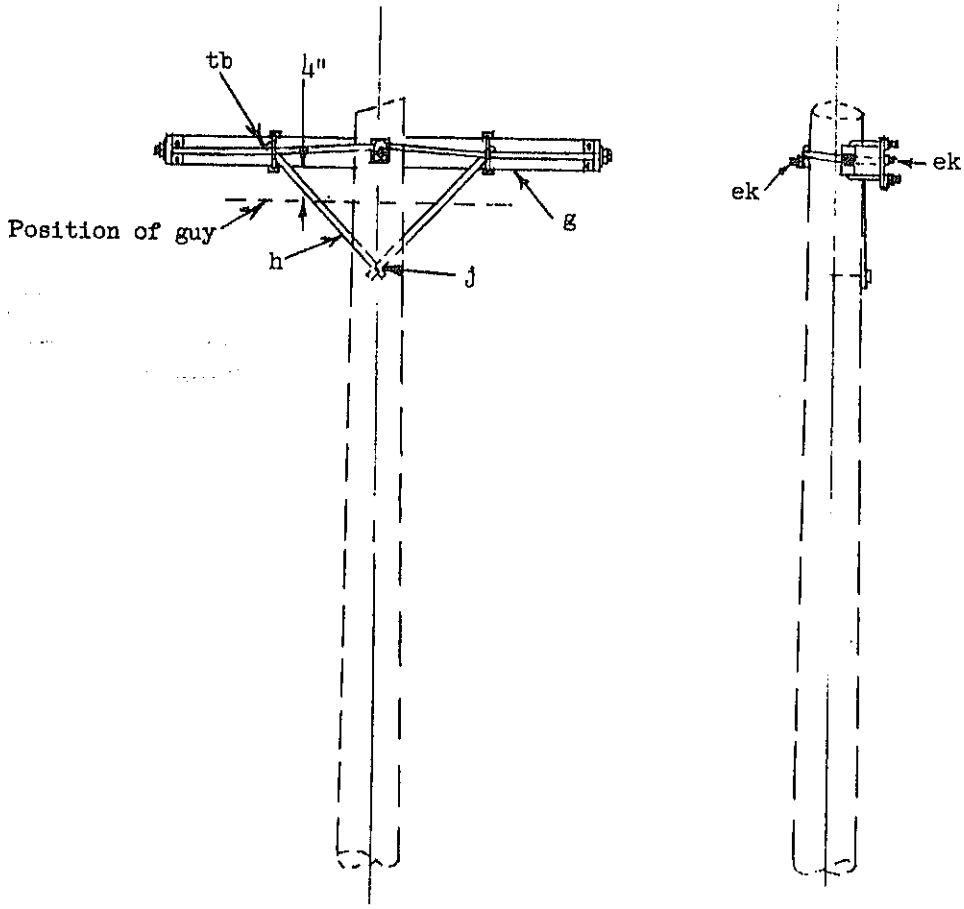
Elevation Plan

NOTE: All hardware items not listed in materials list are supplied with back truss.

USED ON NON-JOINT OR JOINT CORNER POLES FOR 4-INCH SPACED INSULATED OPEN WIRE IN LINES USING 6C OR 10C CROSSARMS. LIMITATIONS: CORNERS 60 TO 90 DEGREES; MAXIMUM LONGITUDINAL PULL 1500 LBS. PER CONDUCTOR.

SCA

Fi



Elevation

Side Elevation

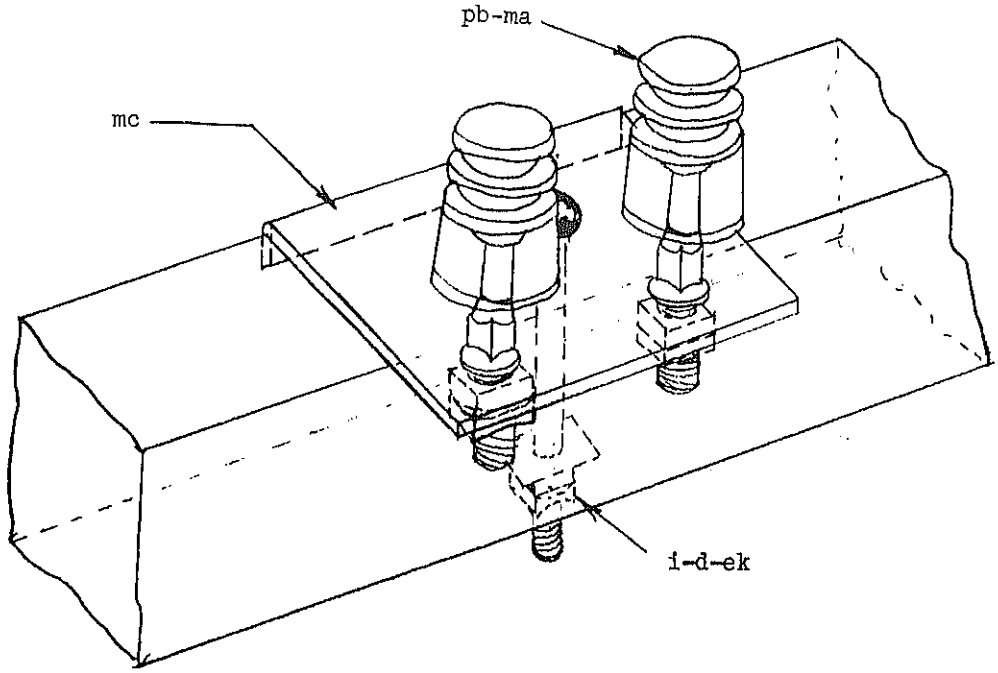
NOTE: All hardware items not listed in materials list are supplied with back truss.

USED ON NON-JOINT OR JOINT DEADEND POLES FOR 4-INCH SPACED INSULATED OPEN WIRE ON LINES USING 6C OR 10C CROSSARMS. LIMITATION: MAXIMUM LONGITUDINAL PULL 1500 LBS. PER CONDUCTOR.

RURAL TELEPHONE CONSTRUCTION PRACTICES
DEADEND, SINGLE CROSSARM (TYPE DETE)
(INSULATED OPEN WIRE CONSTRUCTION)

SCALE: NTS		February 19, 1962
		PB6-8

Figure 8



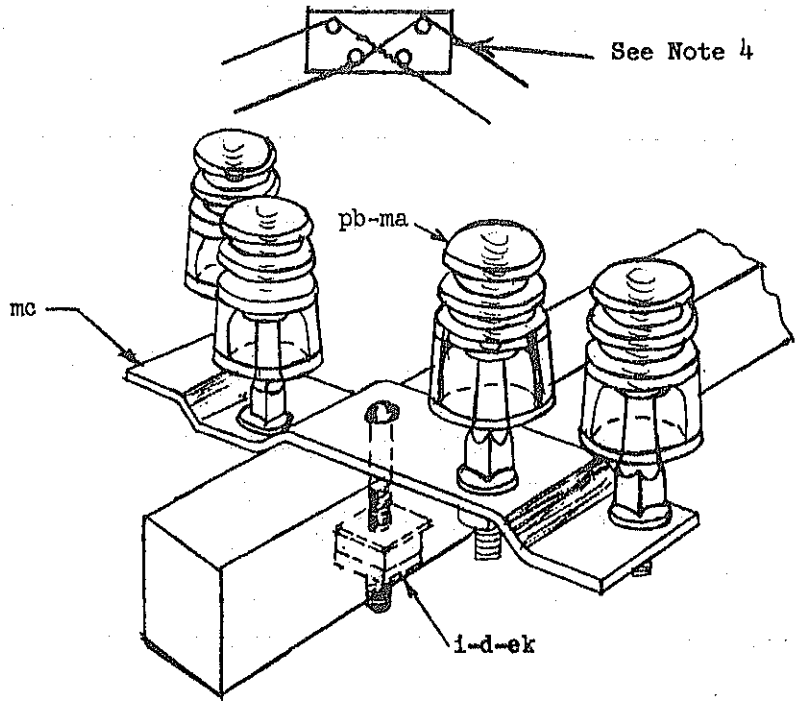
Notes:

1. Bracket is equipped with integrally mounted insulator pins by manufacturer.
2. Plastic bushings must be installed on the insulator pins in the field before installing the glass insulators.
3. Locust bushing must be used when bracket is mounted using holes drilled for wood pins.

USED AS NON-TRANSPOSED ATTACHMENT POINTS ON 4-INCH SPACED INSULATED WIRE LINES ON 6C OR 10C SINGLE CROSSARMS; ALSO IN PAIRS ON THESE CROSSARMS AT DOUBLE-ARMED POLES, FOR EITHER TRANSPOSITION OR NON-TRANSPOSITION WIRE ATTACHMENTS. MAXIMUM CORNER 35 DEGREES ON SINGLE ARMED POLES. SEE FIGURE 11 FOR APPLICATIONS ON DOUBLE ARMED POLES FOR CORNERS 35 TO 60 DEGREES.

RI

SCALE:



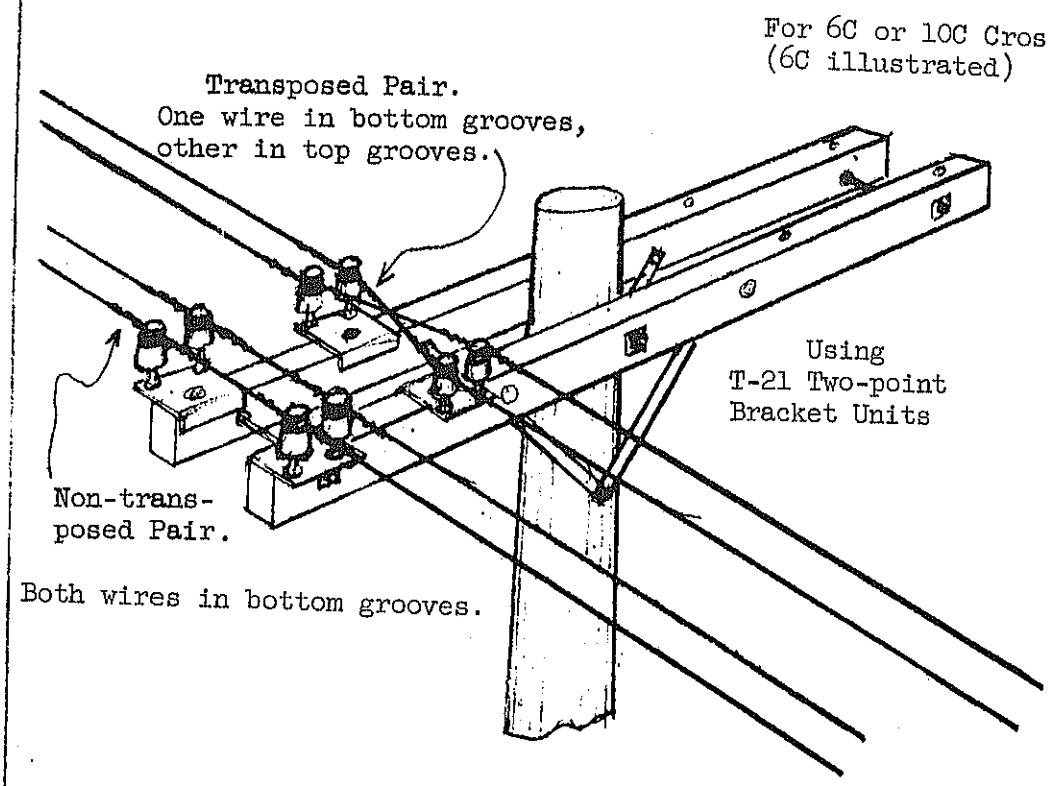
Notes:

1. Bracket is equipped with integrally mounted insulator pins by manufacturers.
2. Plastic bushings must be installed on the insulator pins in the field before installing the glass insulators.
3. Locust bushing must be used when bracket is mounted using holes drilled for wood pins.
4. At corners the two pins nearest to the center of the bracket must face the angle.

USED AS POINT TRANSPOSITION ON 4-INCH SPACED INSULATED OPEN WIRE LINES ON 6C AND C CROSSARMS; CANNOT BE USED ON DOUBLE-ARMED POLES. SEE FIGURE 11 FOR LATTER SITUATION; WIRES ARE PLACED IN BOTTOM GROOVES OF ALL FOUR INSULATORS. CORNER LIMITATION, MAXIMUM 35 DEGREES.

RURAL TELEPHONE CONSTRUCTION PRACTICES
FOUR POINT TRANSPOSITION BRACKET
(INSULATED OPEN WIRE CONSTRUCTION)

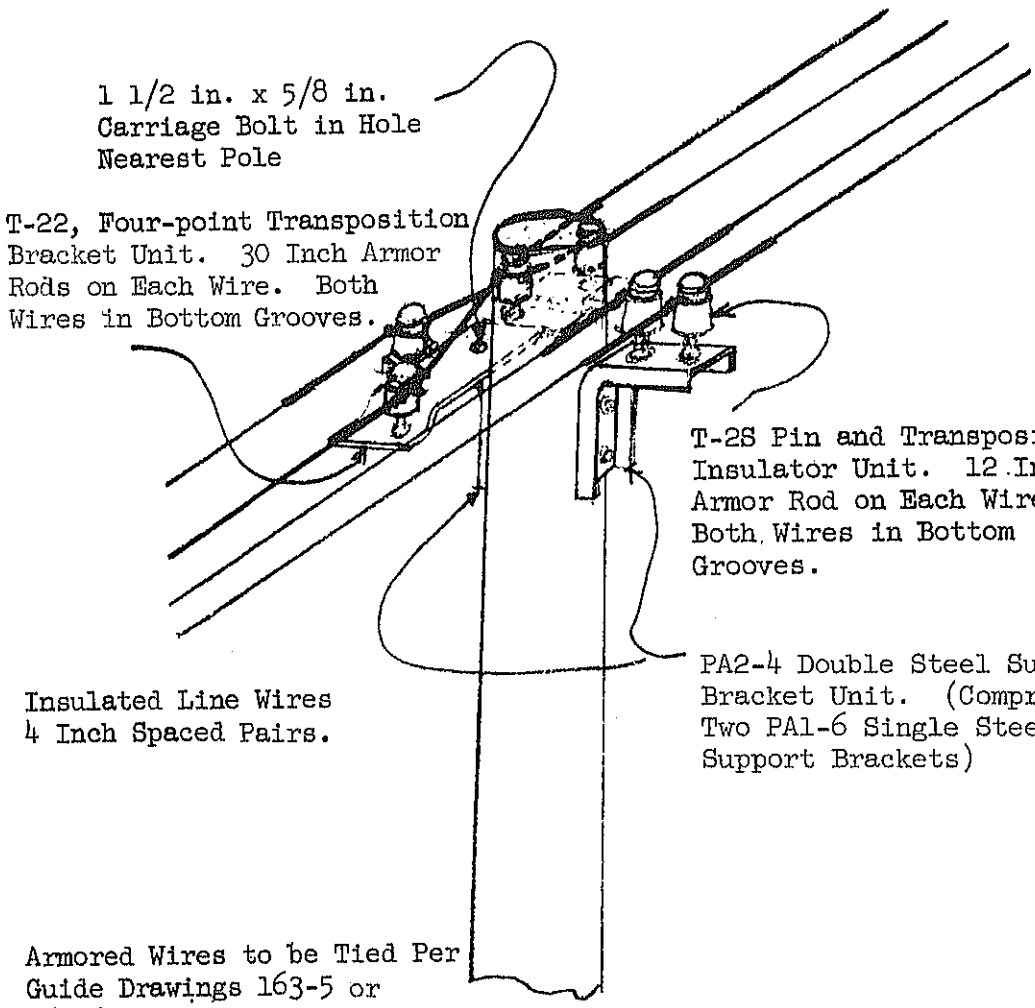
SCALE: NTS		March 1, 1962
		T-22



A 12 inch armor rod shall be installed on each wire at each insulator and the armored wires tied at each insulator per guide drawings 163-5 or 163-6.

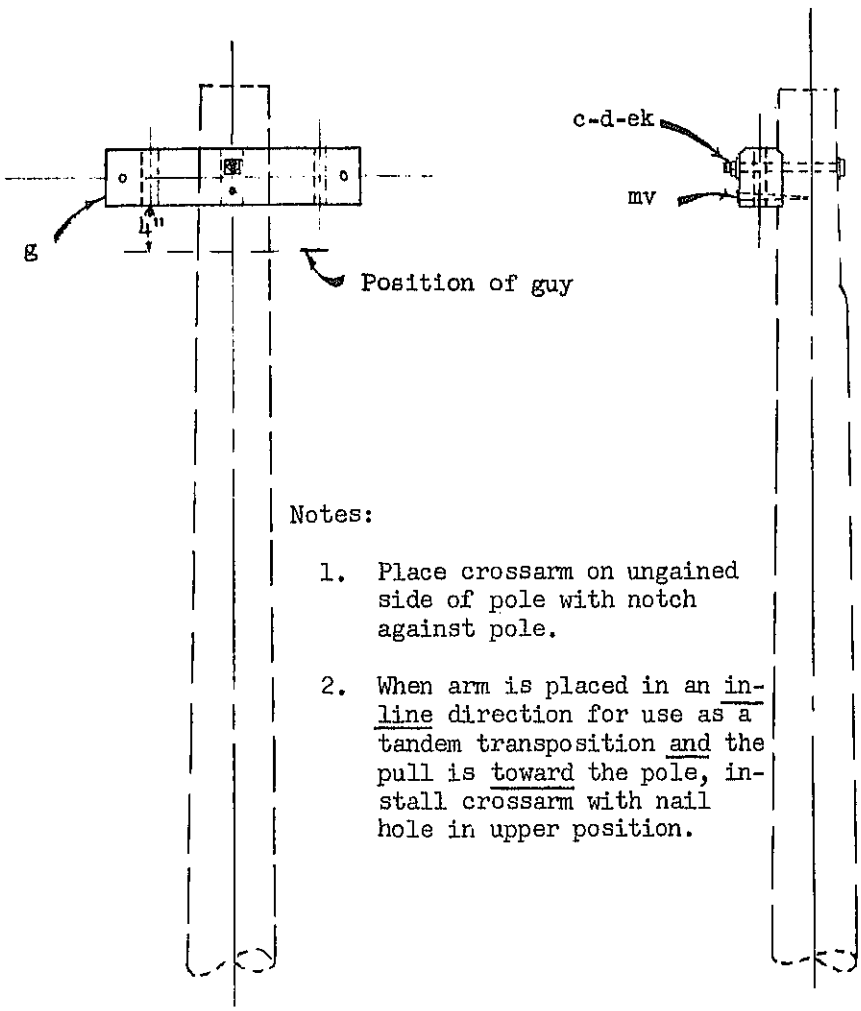
	RURAL TELEPHONE CONSTRUCTION PRACTICES INSULATED WIRE SUPPORTS ON DOUBLE ARMED POLE	
	Scale: NTS	June 19, 1962

Figure 11



	Rural Telephone Construction Practice Insulated Wire Supports on Double Steel Support Bracket	
	Scale: NTS	June 20, 1962

Figure 12



Notes:

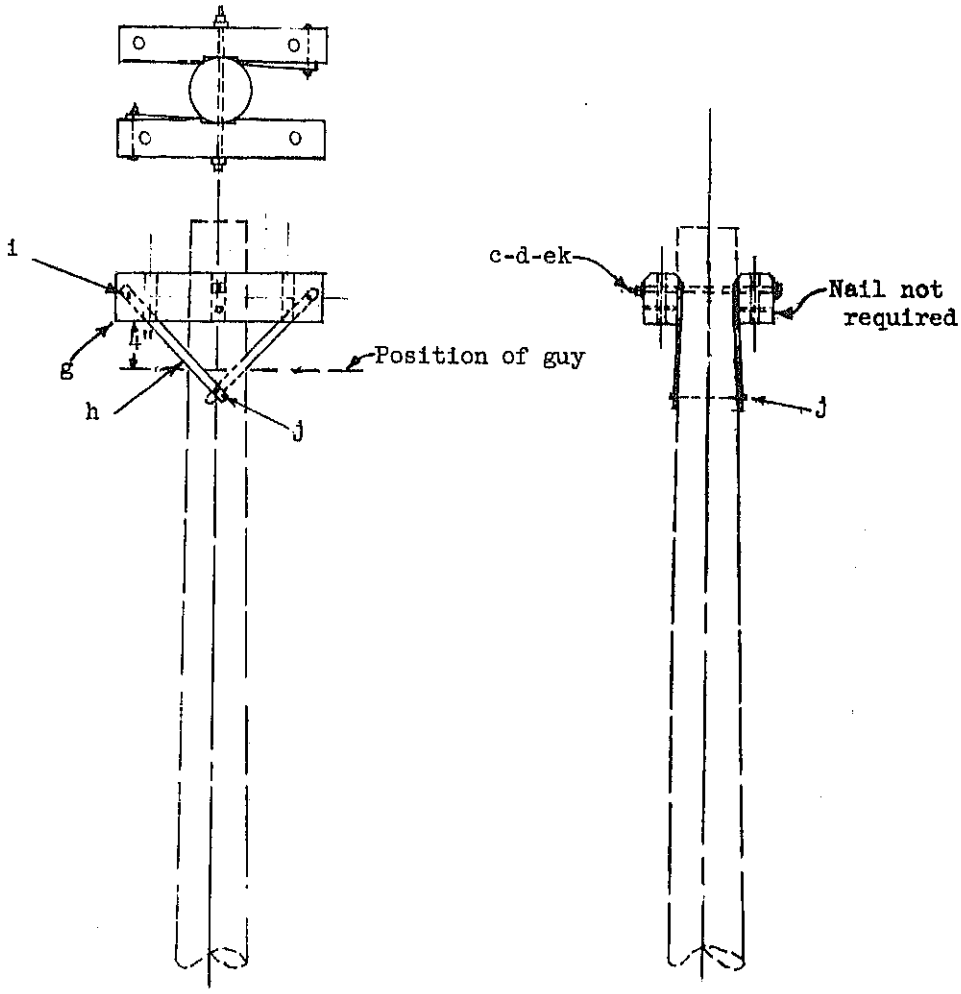
1. Place crossarm on ungained side of pole with notch against pole.
2. When arm is placed in an in-line direction for use as a tandem transposition and the pull is toward the pole, install crossarm with nail hole in upper position.

USED ON NON-JOINT POLES: ALSO AS A TANDEM TRANSPOSITION WITH THE CROSSARM PLACED IN LINE WITH THE WIRES AND USING A T-3 PIN AND INSULATOR UNIT. LIMITATIONS: CORNERS NOT TO EXCEED 5 DEGREES: 300 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR: AND 10 PERCENT MAXIMUM DOWNWARD GRADE CHANGE. SEE GUIDE DRAWINGS 121-1 AND 121-4 FOR PLACEMENT OF THIS CROSSARM.

RURAL TELEPHONE CONSTRUCTION PRACTICES
TWO-PIN CROSSARM (Type 2A)

Scale NTS		February 19, 1962
		PB1-1A

Figure 13



Elevation

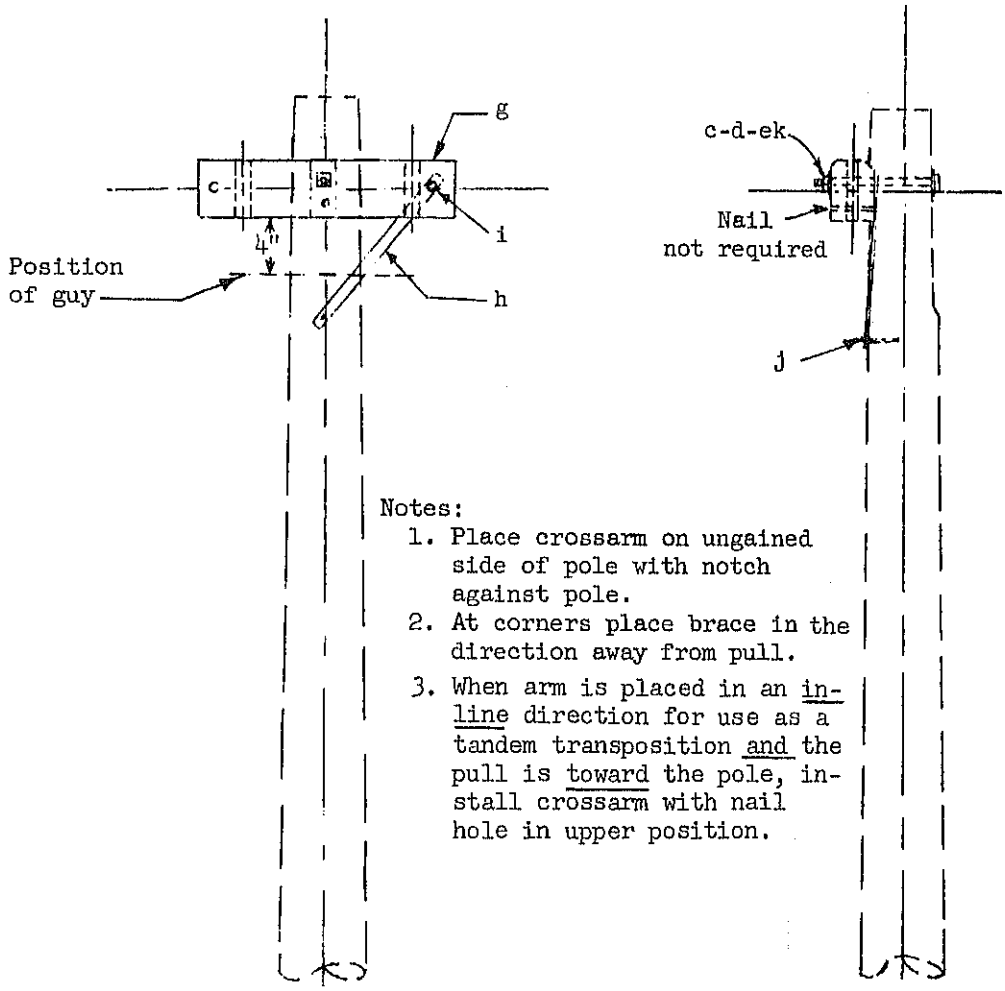
Side Elevation

Notes:

1. At corners place both braces in a direction away from pull.

2. Place crossarms with notches against pole.

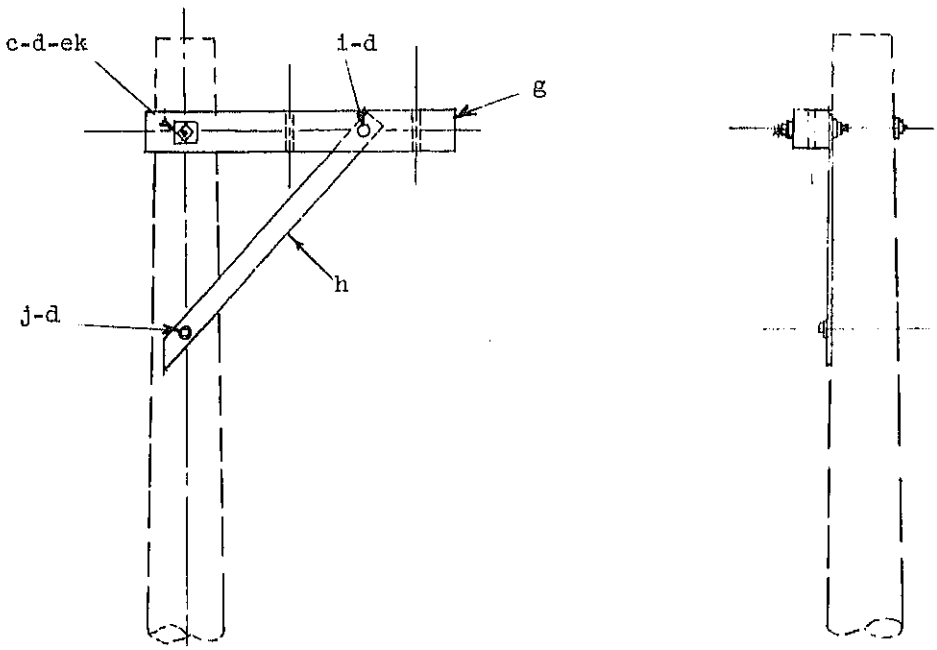
USED ON NON-JOINT POLES AT ALL RAILROAD AND RIVER CROSSINGS; ALSO AT CORNERS AND AT DOWNWARD GRADE CHANGES. LIMITATIONS: CORNERS 35 TO 60 DEGREES; 300 TO 500 LBS. VERTICAL LOAD PER CONDUCTOR; AND 10 TO 25 PERCENT DOWNWARD GRADE CHANGE.



USED ON NON-JOINT CORNER POLES. LIMITATIONS: CORNERS 5 TO 35 DEGREES; 10 PERCENT MAXIMUM DOWNWARD GRADE CHANGE; 300 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR.

	RURAL TELEPHONE CONSTRUCTION PRACTICES TWO-PIN CROSSARM (TYPE 2A)	
Scale: NTS		February 2(
		PB1-3

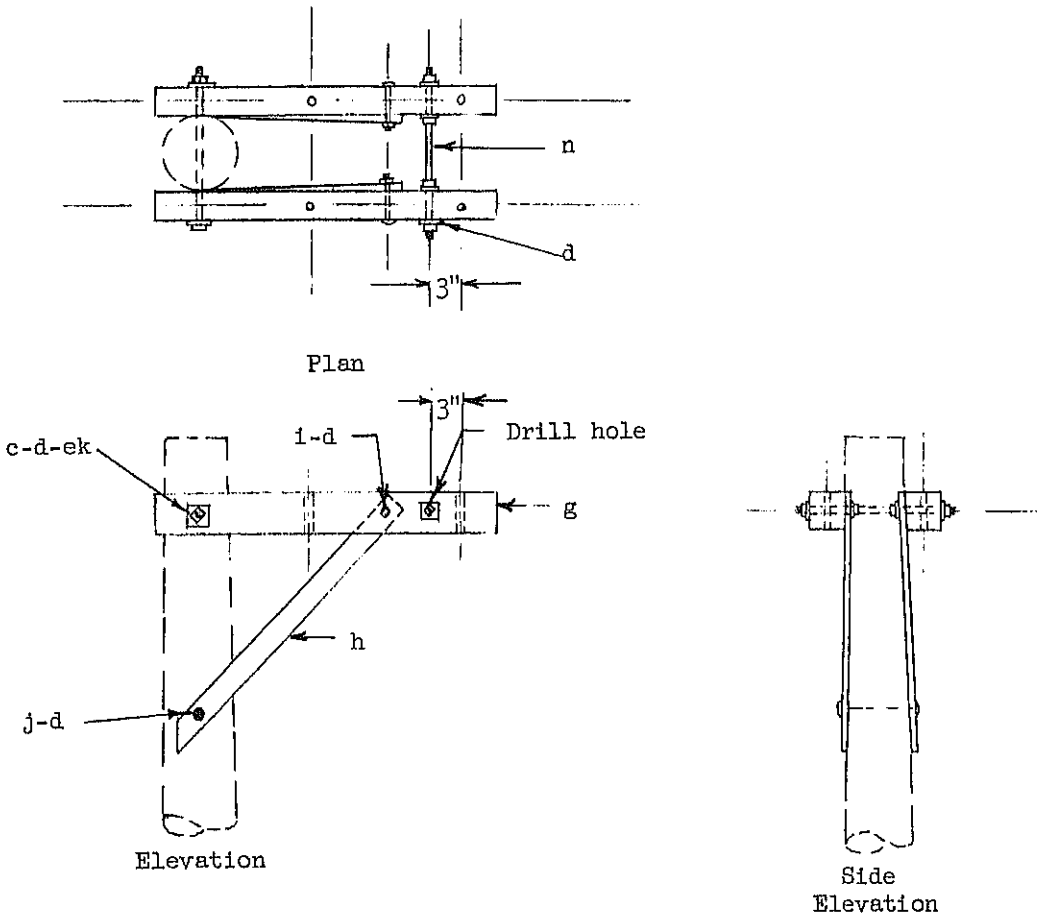
Figure 15



-JOINT LINES AT JOINT POLE CROSSINGS WITH POWER LINES; ON
TO OBTAIN REQUIRED CLIMBING SPACE; AND TO SUPPORT A POINT
SITION BRACKET ON SINGLE CIRCUIT JOINT OR NON-JOINT LINES.
225 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR; HORIZONTAL
00 LBS. PER CONDUCTOR ON EITHER SINGLE PINS OR
BRACKET; 10 PERCENT MAXIMUM DOWNWARD GRADE CHANGE.
IS PLACED SO WIRES PULL TOWARD POLE EXCEPT IN
S MUST STAY ON SAME SIDE OF ALL POLES. NO INCREASE
UIRED FOR THIS SIDE ARM AT CORNERS.

RURAL TELEPHONE CONSTRUCTION PRACTICES		
SINGLE TWO-PIN SIDEARM (TYPE 2B)		
Scale: NTS		January 30, 1956
		PB1-4

Figure 16



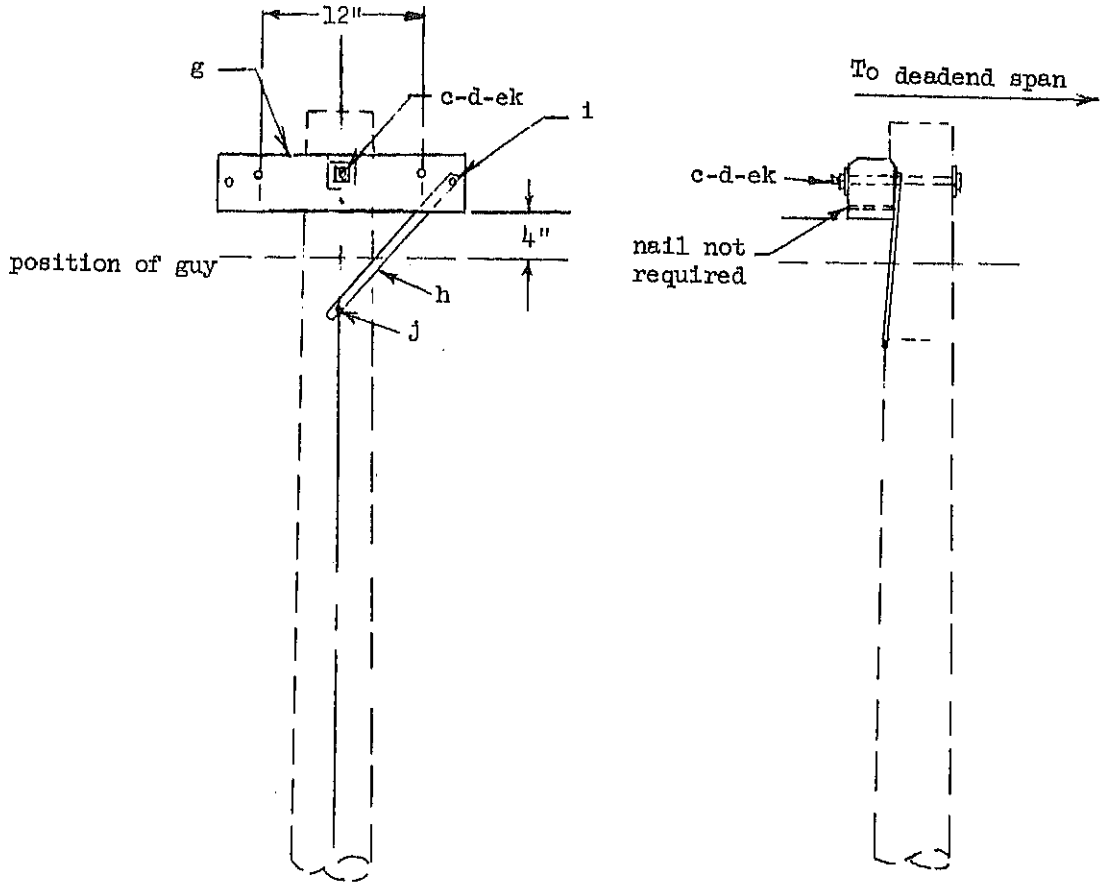
USED ON JOINT USE LINES AT ALL RAILROAD AND RIVER CROSSINGS AND ON NON-JOINT AT JOINT-POLE CROSSINGS WITH POWER LINES: AS A POINT TYPE TRANSPOSITION AT A DOUBLE ARMED POLE IN SINGLE CIRCUIT NON-JOINT OR JOINT LINE AS AN ALTERNATIVE FOR A POINT TYPE BRACKET. LIMITATIONS: 450 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR; HORIZONTAL (TRANSVERSE) PULL 1,000 LBS. PER CONDUCTOR: 25 PERCENT MAXIMUM DOWNWARD GRADE CHANGE: AT CORNERS CROSSARMS ARE PLACED SO PULL IS TOWARD POLE, EXCEPT IN JOINT USE WHERE WIRES MUST STAY ON SAME SIDE OF ALL POLES. NO INCREASE IN POLE CLASS IS REQUIRED FOR THIS SIDE ARM AT CORNERS.

RURAL TELEPHONE CONSTRUCTION PRACTICES

DOUBLE TWO-PIN SIDEARM (TYPE 2B)

Scale: NTS		February 13, 1956
		PB1-5

Figure 17



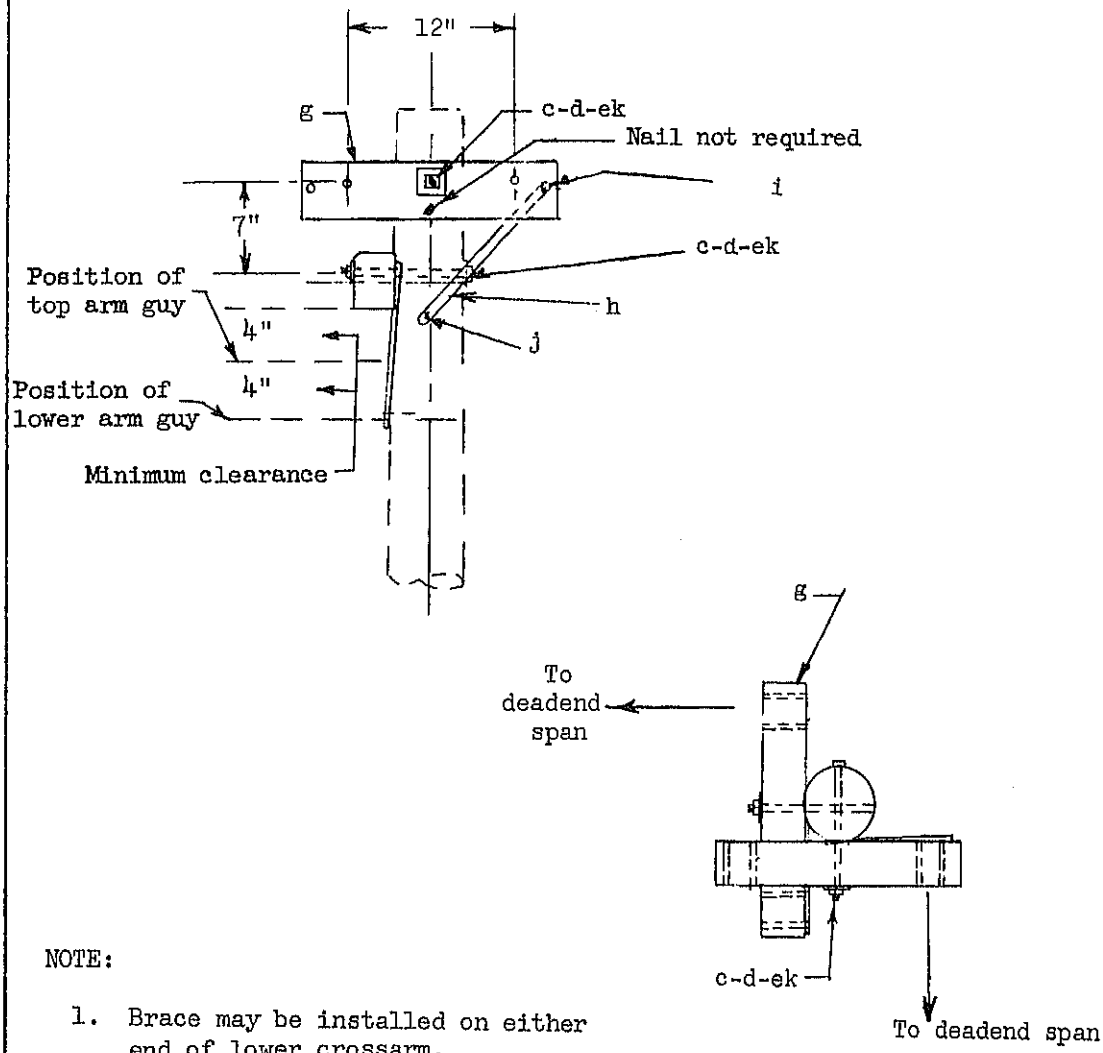
NOTE:

1. Brace may be installed on either end of crossarm.

USED AS DEADEND ON JOINT OR NON-JOINT POLES. LIMITATIONS: 1500 POUNDS MAXIMUM PULL PER CONDUCTOR.

	RURAL TELEPHONE CONSTRUCTION PRACTICES DEADEND SINGLE CROSSARM (TYPE DEP)	
	Scale: NTS	February 20, 1962
		PB1-6

Figure 18



NOTE:

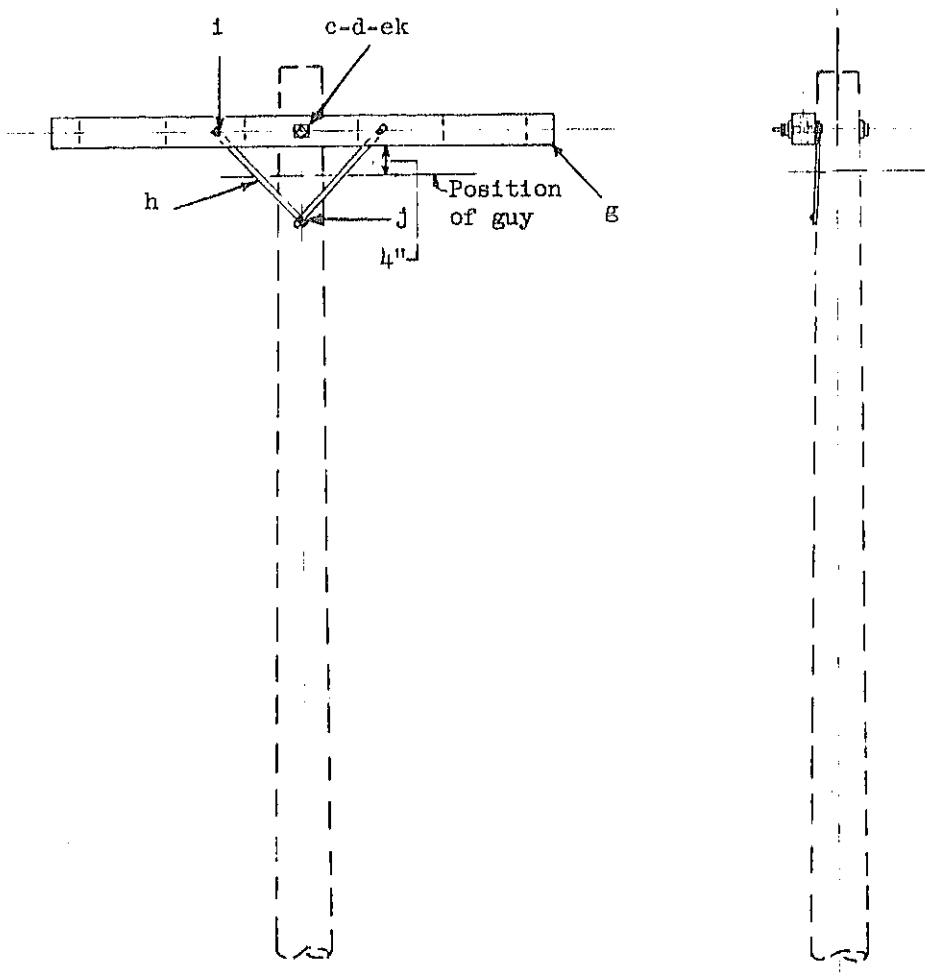
1. Brace may be installed on either end of lower crossarm.

USED AS CORNER ON SINGLE CIRCUIT JOINT OR NON-JOINT POLES. LIMITATIONS: CORNERS OVER 60 DEGREES; 1500 LBS. MAXIMUM PULL PER CONDUCTOR.

RURAL TELEPHONE CONSTRUCTION PRACTICES
DEADEND, TWO SINGLE CROSSARMS (Type DEP)
(BUCKARM)

Scale: NTS		February 20, 1962
		PB1-7

Figure 19



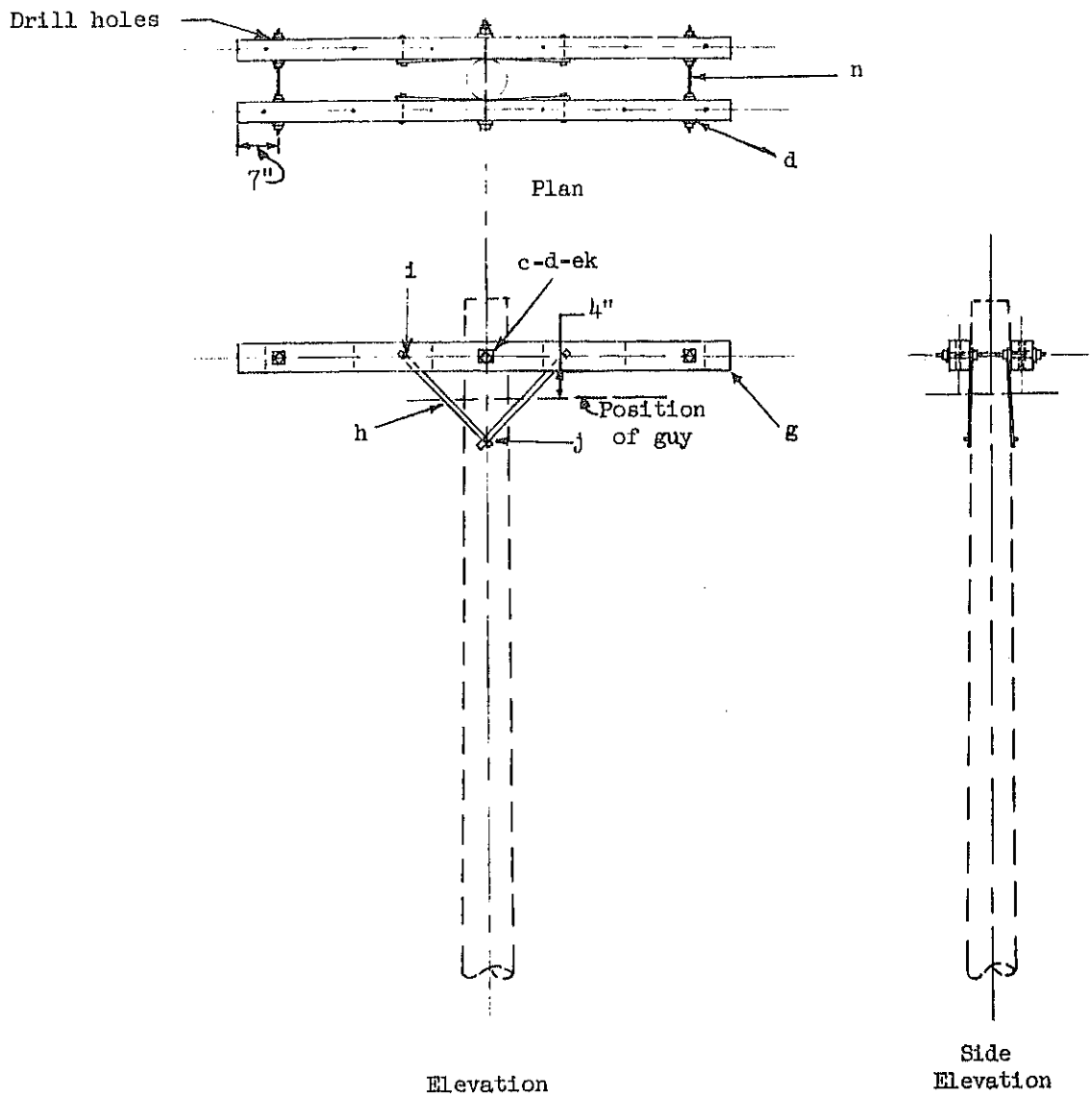
Elevation

Side
Elevation

USED ON NON-JOINT TANGENT OR CORNER POLES. LIMITATIONS: MAXIMUM CORNER 35 DEGREES: 225 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR; 10 PERCENT MAXIMUM DOWNWARD GRADE CHANGE.

	RURAL TELEPHONE CONSTRUCTION PRACTICES SINGLE SIX-PIN CROSSARM (TYPE 6A)	
	Scale: NTS	Sept. 26, 1958
		PB3-1

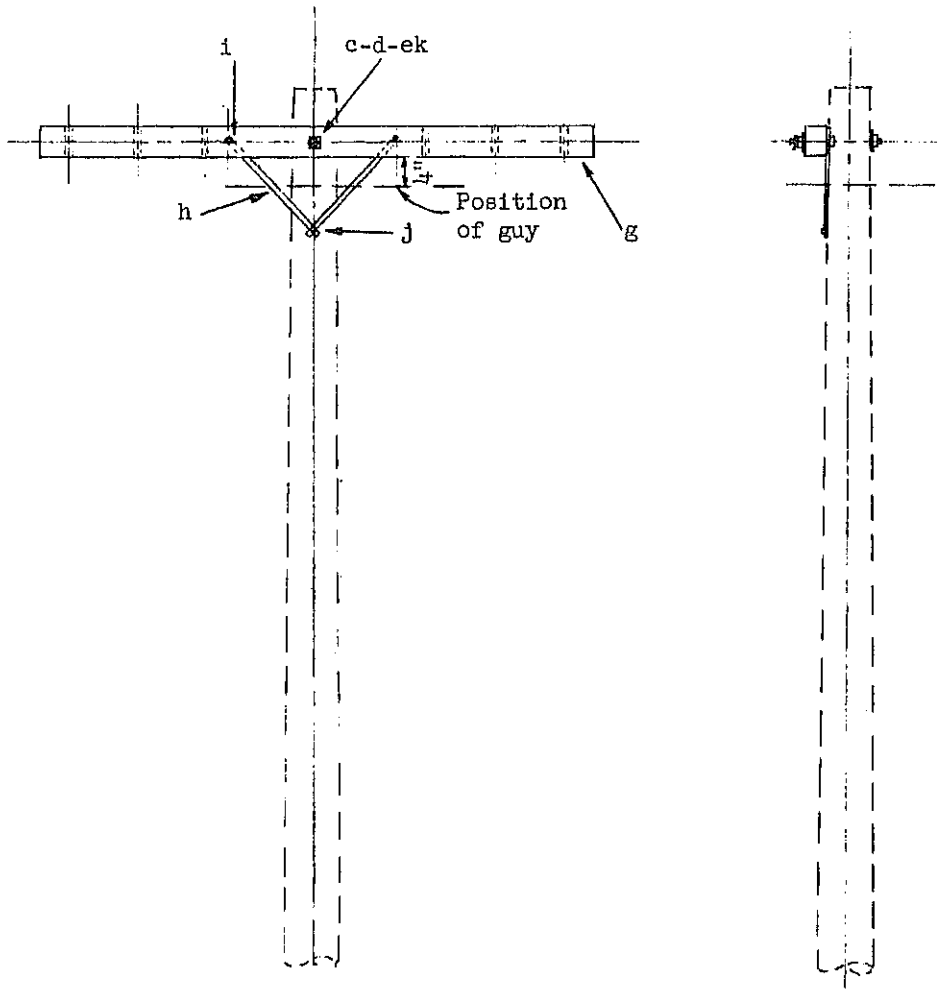
Figure 20



USED ON NON-JOINT POLES AT ALL RAILROAD AND RIVER CROSSINGS; ALSO AT CORNERS AND FOR DOWNWARD GRADE CHANGES, EXCEEDING 10 PERCENT. LIMITATIONS: CORNERS 35 TO 60 DEGREES; VERTICAL LOAD PER CONDUCTOR 225 TO 450 LBS. AND 25 PERCENT MAXIMUM DOWNWARD GRADE CHANGE.

	RURAL TELEPHONE CONSTRUCTION PRACTICES DOUBLE SIX PIN CROSSARM (TYPE 6A)	
	Scale: NTS	September 22, 1958
		PB3-2

Figure 21



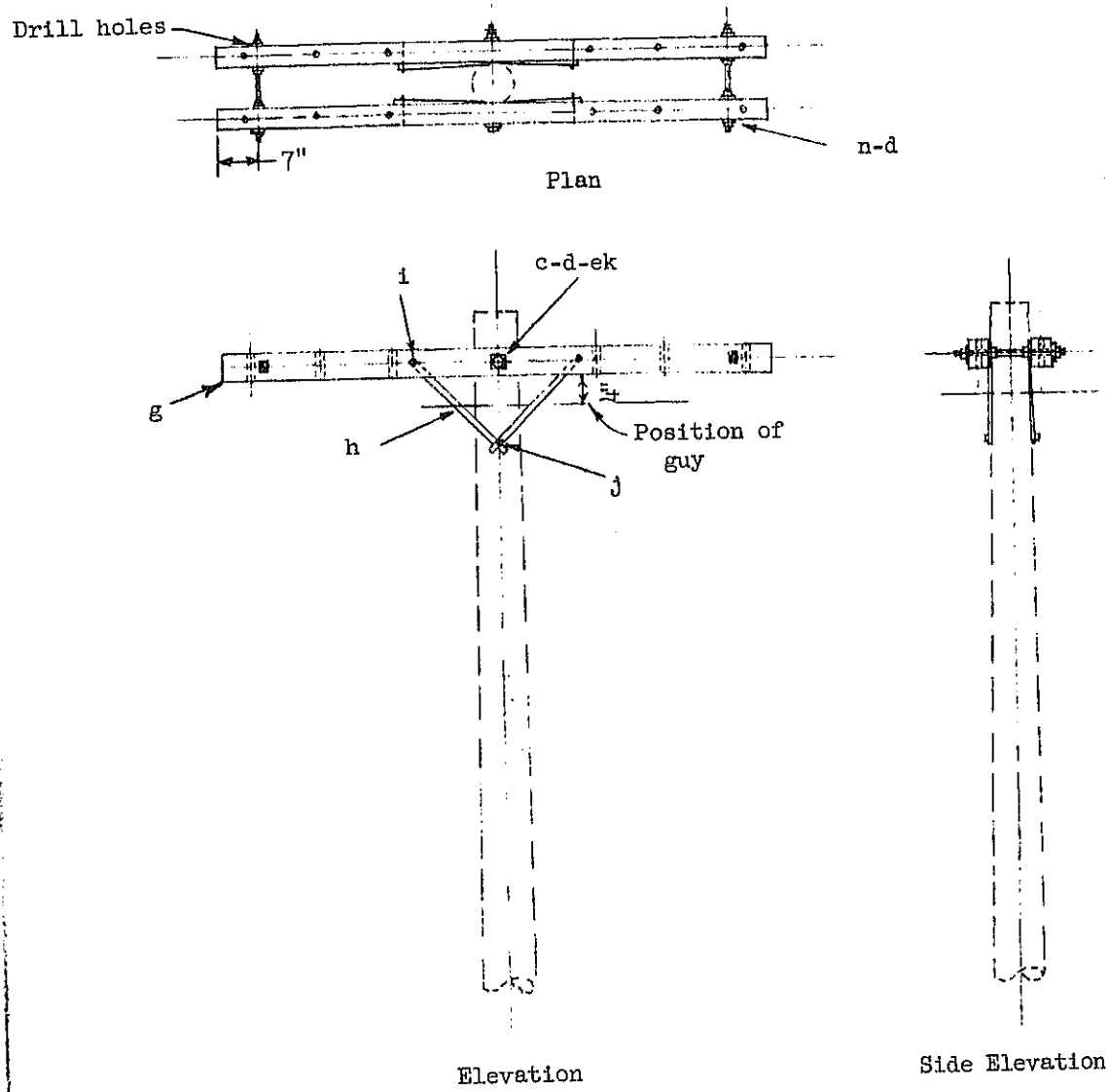
Elevation

Side Elevation

USED ON POLES AT JOINT POLE CROSSINGS WITH POWER LINES; ALSO USED FOR TANGENT AND CORNER POLES IN JOINT LINES AND IS PERMISSIBLE FOR NON-JOINT EXTENSIONS TO JOINT LINES. LIMITATIONS: MAXIMUM CORNER 35 DEGREES; 225 POUNDS MAXIMUM VERTICAL LOAD PER CONDUCTOR; TEN PERCENT MAXIMUM DOWNWARD GRADE CHANGE.

	RURAL TELEPHONE CONSTRUCTION PRACTICES SINGLE SIX-PIN CROSSARM (TYPE 6B)	
	Scale: NTS	December 7, 1954
		PB3-3

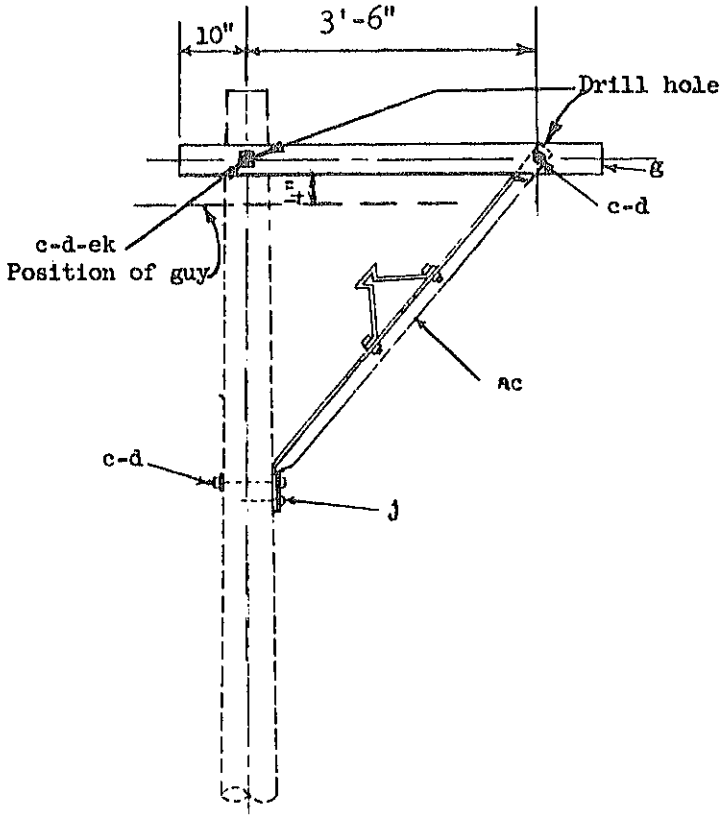
Figure 22



USED ON JOINT POLES IF DOUBLE ARMS ARE NECESSARY; ALSO ON JOINT LINES AT ALL RAILROAD AND RIVER CROSSINGS AND IS PERMISSIBLE ON NON-JOINT EXTENSIONS TO JOINT LINES; ALSO AT CORNERS AND FOR DOWNWARD GRADE CHANGES EXCEEDING TEN PERCENT. LIMITATIONS: CORNERS 35 TO 60 DEGREES; VERTICAL LOAD PER CONDUCTOR 225 TO 450 POUNDS, AND 25 PERCENT MAXIMUM DOWNWARD GRADE CHANGE.

	RURAL TELEPHONE CONSTRUCTION PRACTICES DOUBLE SIX-PIN CROSSARM (TYPE 6B)	
Scale: NTS		January 24, 1957
		PB3-4

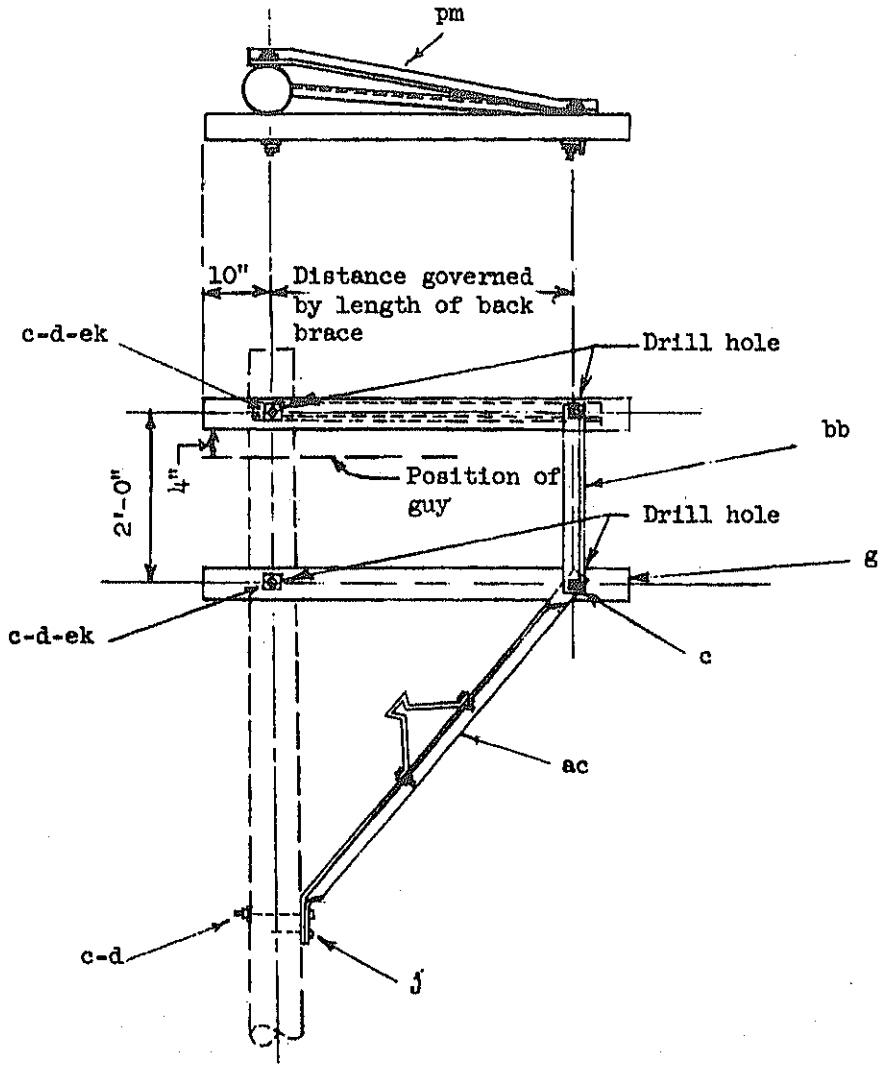
Figure 23



USED ON NON-JOINT POLES TO AVOID TREES OR OTHER OBSTRUCTIONS. LIMITATIONS: MAXIMUM CORNER FIVE DEGREES WITHOUT GUY; 225 POUNDS MAXIMUM VERTICAL LOAD PER CONDUCTOR; TEN PERCENT MAXIMUM DOWNWARD GRADE CHANGE. REQUIRES POLE ONE CLASS LARGER THAN OTHERS IN NON-JOINT LINES.

	RURAL TELEPHONE CONSTRUCTION PRACTICES SINGLE SIX PIN SIDEARM (TYPE 6A)	
	Scale: NTS	Sept. 20, 1960 PB3-7

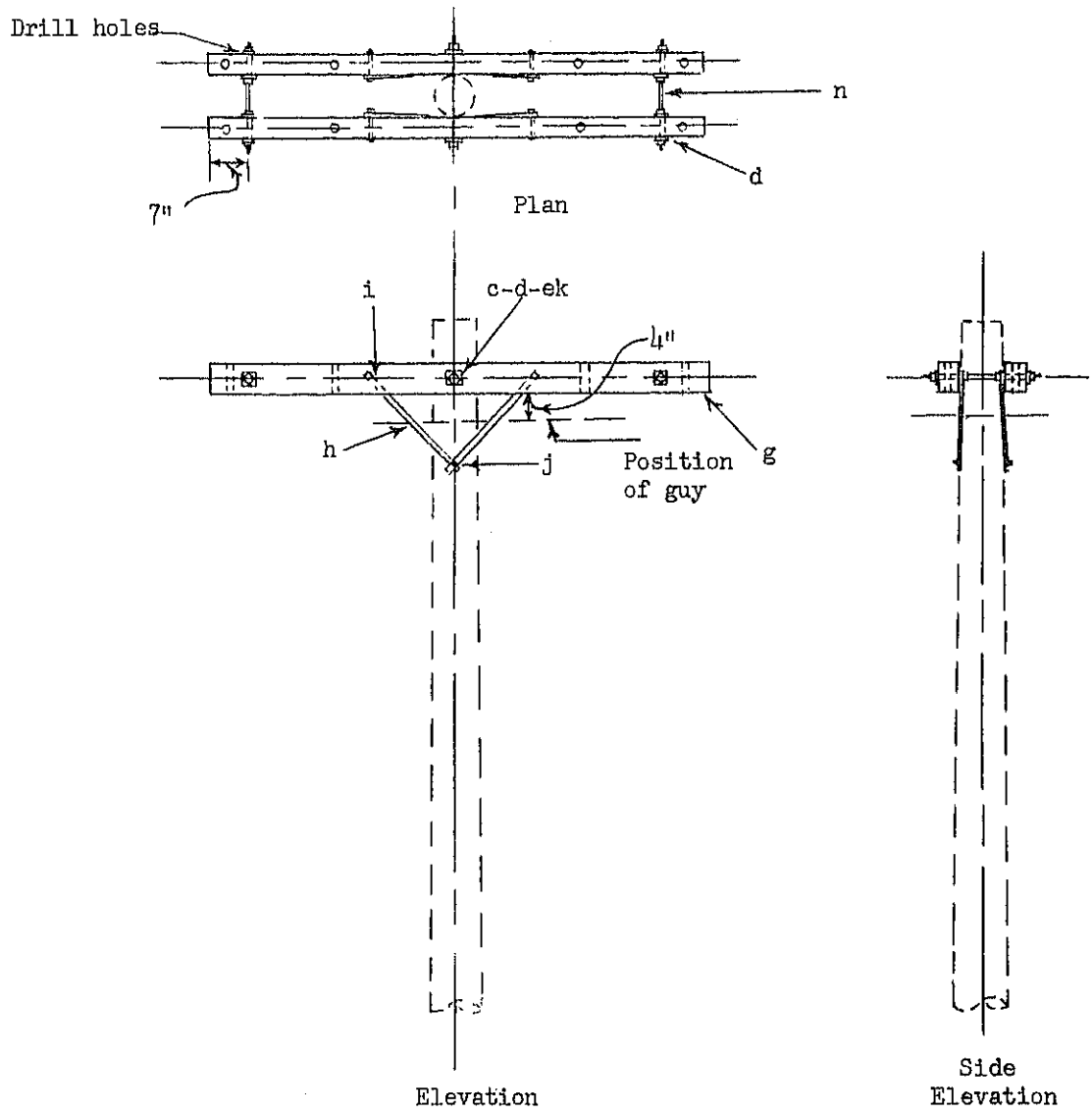
Figure 24



USED ON NON-JOINT POLES TO AVOID TREES OR OTHER OBSTRUCTIONS. LIMITATIONS: MAXIMUM CORNER FIVE DEGREES WITHOUT GUY; 225 POUNDS MAXIMUM VERTICAL LOAD PER CONDUCTOR; TEN PERCENT MAXIMUM DOWNWARD GRADE CHANGE; REQUIRES POLE ONE CLASS LARGER THAN OTHERS IN NON-JOINT LINES.

	RURAL TELEPHONE CONSTRUCTION PRACTICES	
	TWO SINGLE 6-PIN SIDE ARMS (TYPE 6A)	
Scale: NTS		January 18, 1
		PB3-8

Figure 25

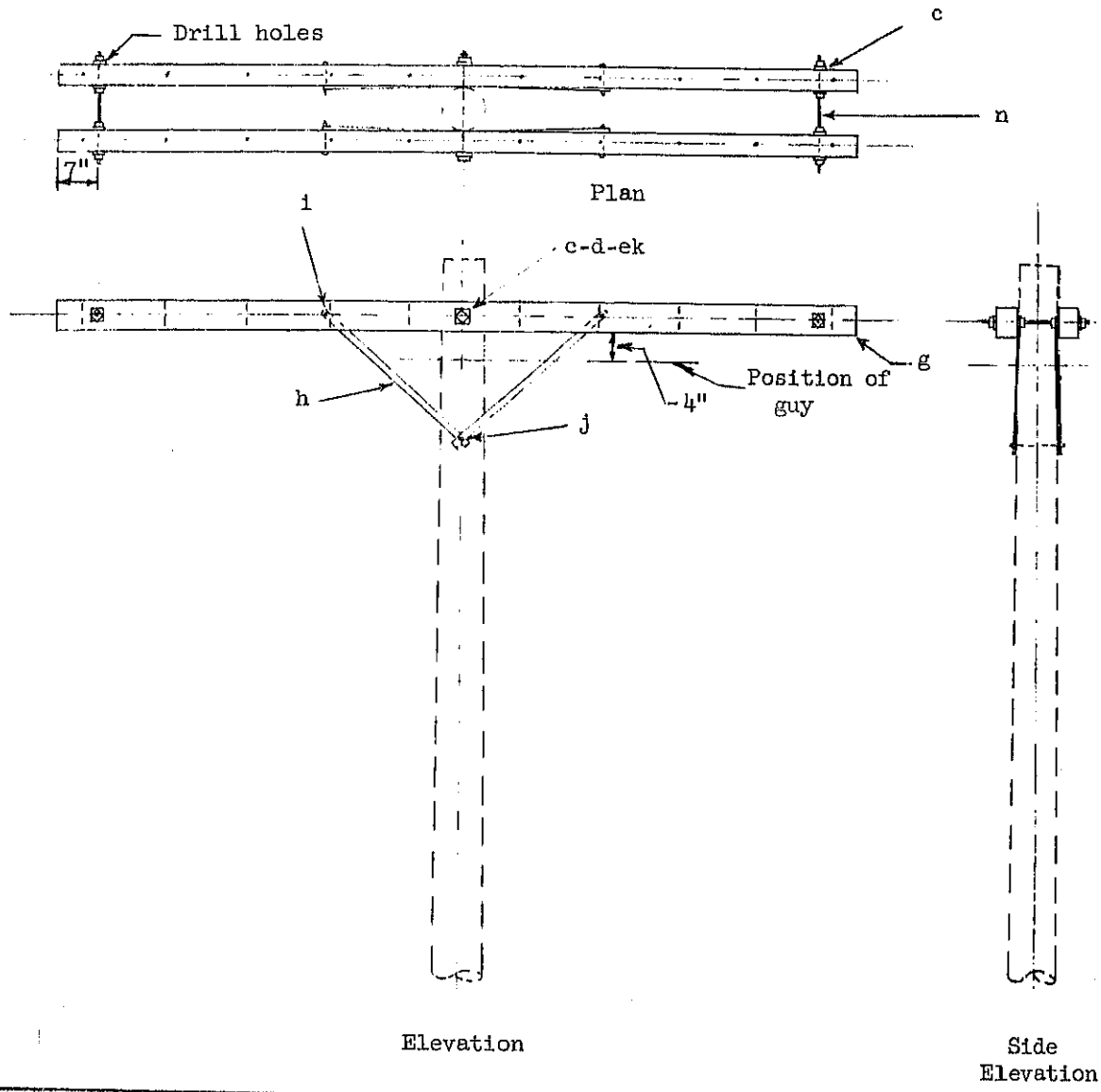


USED ON NON-JOINT TANGENT OR CORNER POLES. LIMITATIONS: MAXIMUM CORNER 35 DEGREES; 225 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR; 10 PERCENT MAXIMUM DOWNWARD GRADE CHANGE.

RURAL TELEPHONE CONSTRUCTION PRACTICES
DOUBLE FOUR PIN CROSSARM (TYPE 6C)
(INSULATED OPEN WIRE CONSTRUCTION)

Scale: NTS		February 24, 1962
		PB4-2

Figure 26



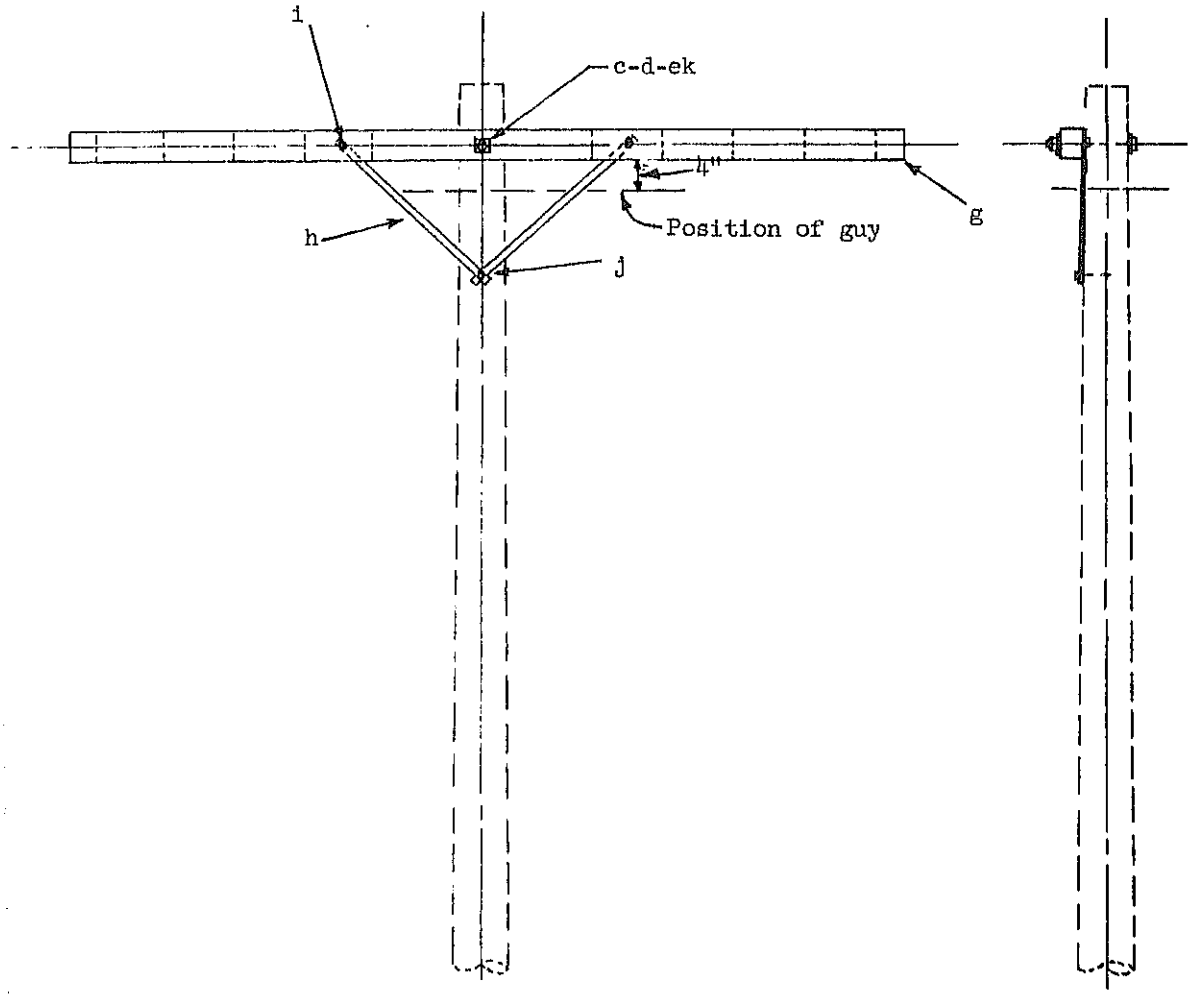
USED ON NON-JOINT POLES AT ALL RAILROAD AND RIVER CROSSINGS; ALSO AT CORNERS AND FOR DOWNWARD GRADE CHANGES EXCEEDING 10 PERCENT. LIMITATIONS: CORNERS 35 TO 60 DEGREES; VERTICAL LOAD PER CONDUCTOR 225 TO 450 LBS., AND 25 PERCENT MAXIMUM DOWNARD GRADE CHANGE.

RURAL TELEPHONE CONSTRUCTION PRACTICES

DOUBLE TEN-PIN CROSSARM (TYPE 10A)

Scale: NTS		January 24, 1957
		PB5-2

Figure 27



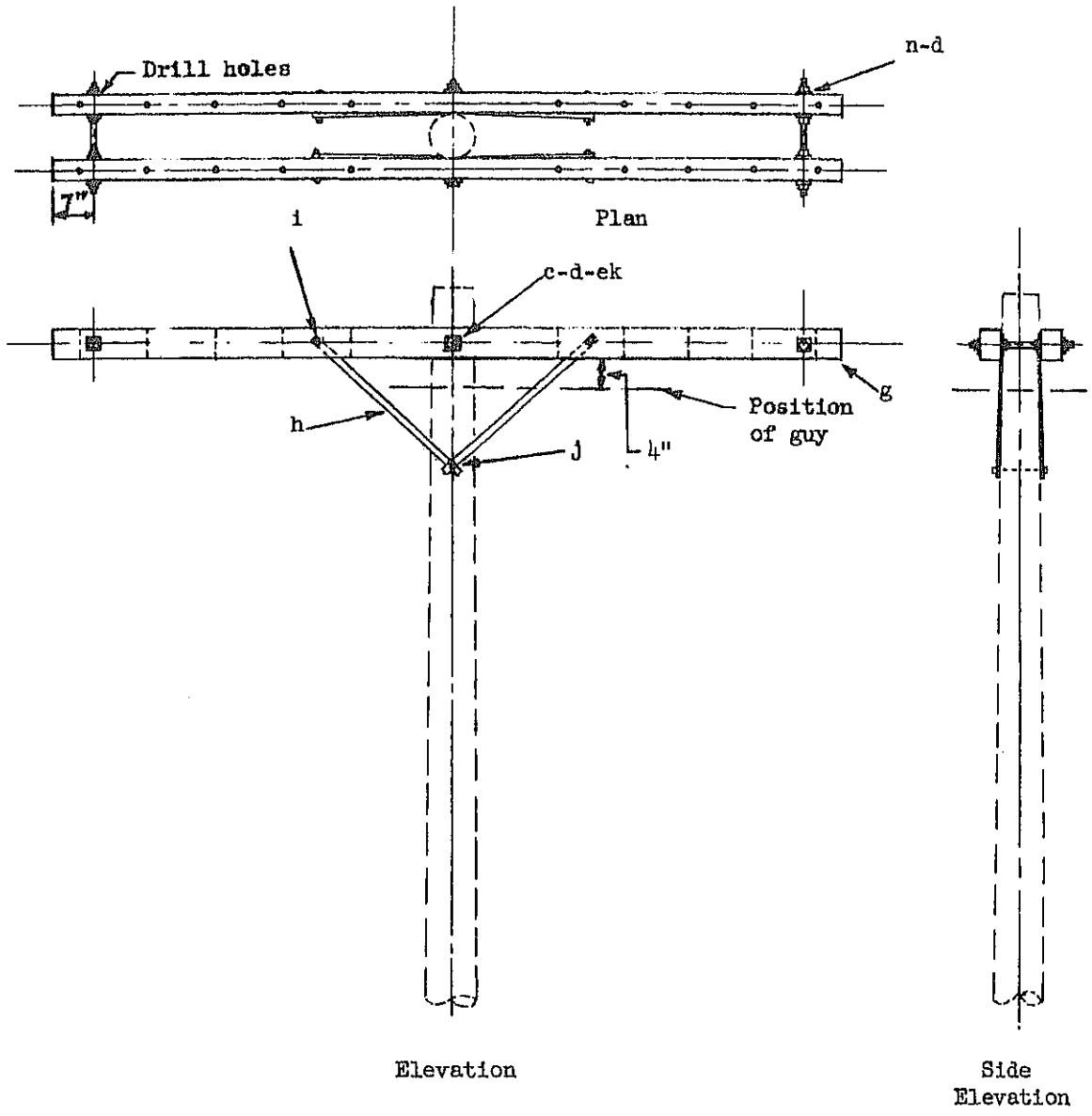
Elevation

Side Elevation

USED ON NON-JOINT POLES AT JOINT POLE CROSSINGS WITH POWER LINES; ALSO USED ON TANGENT AND CORNER POLES IN JOINT LINES, AND IS PERMISSIBLE FOR NON-JOINT EXTENSIONS TO JOINT LINES. LIMITATIONS: MAXIMUM CORNER 35 DEGREES; 225 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR; 10 PERCENT MAXIMUM DOWNWARD GRADE CHANGE.

	RURAL TELEPHONE CONSTRUCTION PRACTICES SINGLE TEN-PIN CROSSARM (TYPE 10B)	
	Scale: NTS	December 3, 1954
		PB5-3

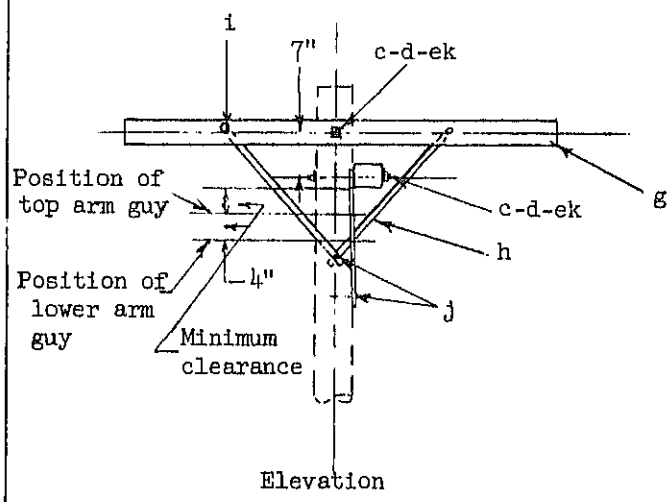
Figure 28



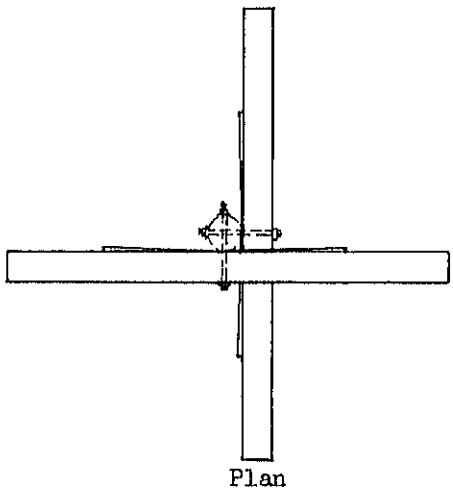
USED ON JOINT POLE IF DOUBLE ARMS ARE NECESSARY, ALSO ON JOINT LINES AT ALL RAILROAD AND RIVER CROSSINGS AND IS PERMISSIBLE ON NON-JOINT EXTENSIONS TO JOINT LINES; ALSO AT CORNERS AND FOR DOWNWARD GRADE CHANGES EXCEEDING TEN PERCENT. LIMITATIONS: CORNERS 35 TO 60 DEGREES; VERTICAL LOAD PER CONDUCTOR 225 TO 450 POUNDS, AND 25 PERCENT MAXIMUM DOWNWARD GRADE CHANGE.

RURAL TELEPHONE CONSTRUCTION PRACTICES		
DOUBLE TEN-PIN CROSSARM (TYPE 10B)		
Scale: NTS		January 24, 1957
		PB5-4

Figure 29



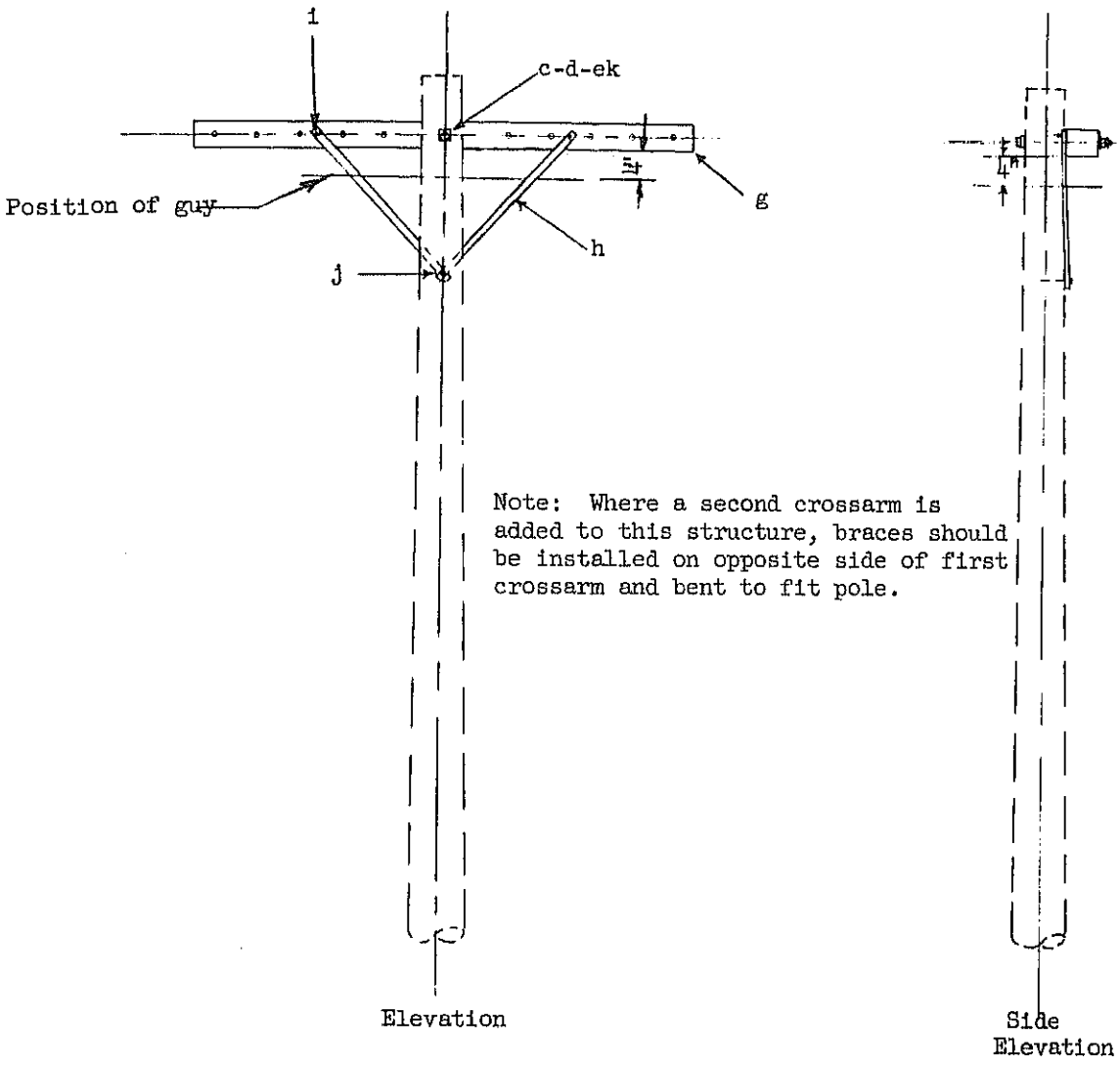
WHERE ONE OF THE TWO SPANS HAS AN UP-PULL PLACE ITS CIRCUITS ON UPPER CROSSARM. IF ONE HAS A DOWNPULL PLACE ITS CIRCUITS ON LOWER ARM. IF BOTH SPANS PULL UP OR DOWN ADJUST SEPARATION OF CROSSARMS TO GIVE INCREASED SEPARATION BETWEEN THE WIRES IN THE TWO SPANS.



USED ON JOINT OR NON-JOINT CORNER POLES. LIMITATIONS: CORNERS 60 TO 90 DEGREES. MAXIMUM LONGITUDINAL PULL 650 LBS. PER CONDUCTOR. WHERE DEADENDING ONLY 4 TO 6 WIRES WITH THE REMAINING PIN POSITIONS NOT TO BE OCCUPIED ULTIMATELY, THE MAXIMUM LOAD PER WIRE MAY BE PROPORTIONALLY INCREASED. NOT TO BE USED ON LINES USING REA-1 TRANSPOSITION SYSTEM. SEE FIGURES 36, 37, AND 38 FOR THESE EXCEPTIONS. SEE GUIDE DRAWING 702 FOR NOTE ON CLIMBING SPACE.

	RURAL TELEPHONE CONSTRUCTION PRACTICES DEADEND, TWO SINGLE CROSSARMS (TYPE DE)	
	Scale: NTS	November 13, 1958
		PB5-5

Figure 30



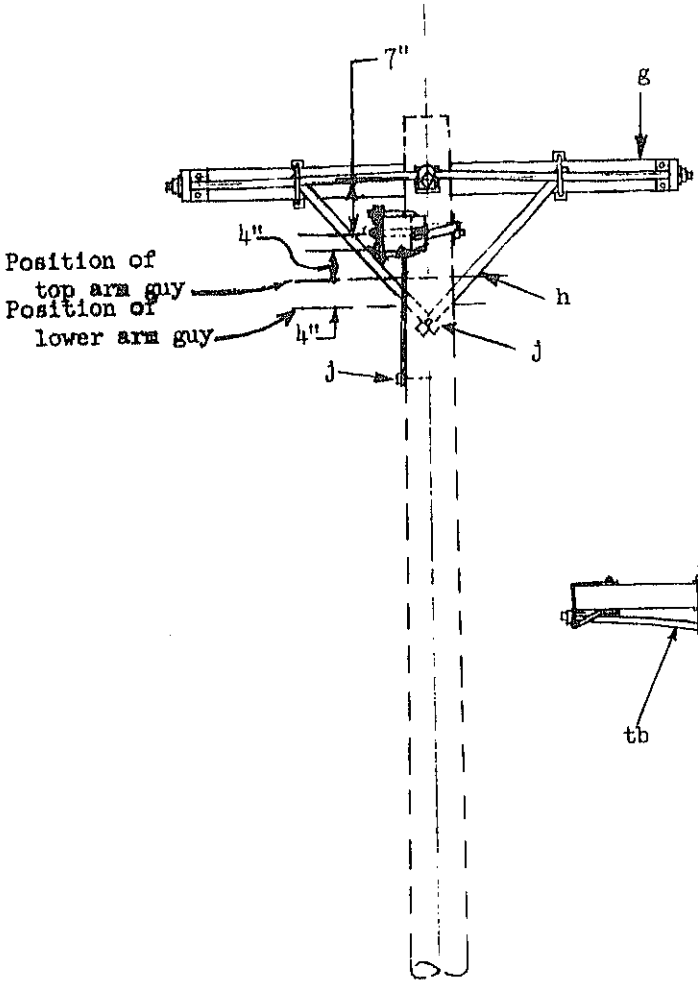
USED ON JOINT OR NON-JOINT DEADEND POLES. LIMITATIONS: MAXIMUM LONGITUDINAL PULL PER CONDUCTOR 650 LBS. WHERE DEADENDING ONLY 4 OR 6 WIRES WITH THE REMAINING PIN POSITIONS NOT TO BE OCCUPIED ULTIMATELY, THE MAXIMUM LOAD MAY BE PROPORTIONATELY INCREASED; AND NOT TO BE USED IN LINES USING THE REA-1 TRANSPOSITION SYSTEM. SEE FIGURES 36, 37, AND 38 FOR THESE EXCEPTIONS.

RURAL TELEPHONE CONSTRUCTION PRACTICES

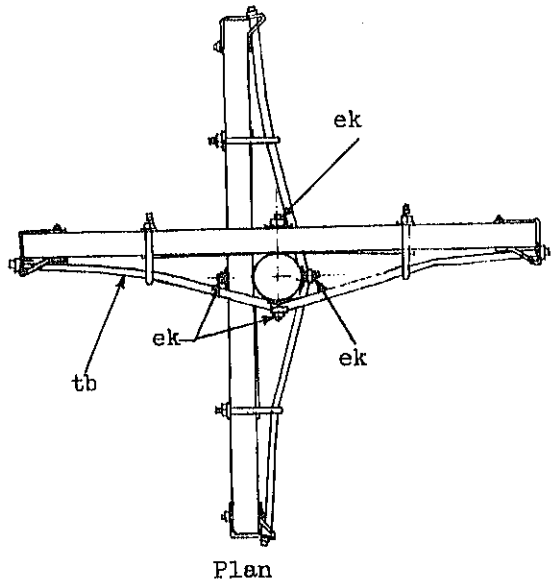
DEADEND, SINGLE CROSSARM (TYPE DE)

Scale: NTS		December 2, 1954 PB5-6

Figure 31



Elevation



Plan

Note: All hardware items not listed in materials list are supplied with back truss.

USED ON JOINT OR NON-JOINT CORNER POLES. LIMITATIONS: CORNERS 60 TO 90 DEGREES: MAXIMUM LONGITUDINAL PULL 1500 LBS. PER CONDUCTOR; AND NOT TO BE USED IN LINES USING THE REA-1 TRANSPOSITION SYSTEM. SEE FIGURES 36, 37, and 38 FOR THESE EXCEPTIONS. SEE GUIDE DRAWING 702 FOR NOTE ON CLIMBING SPACE.

RURAL TELEPHONE CONSTRUCTION PRACTICES

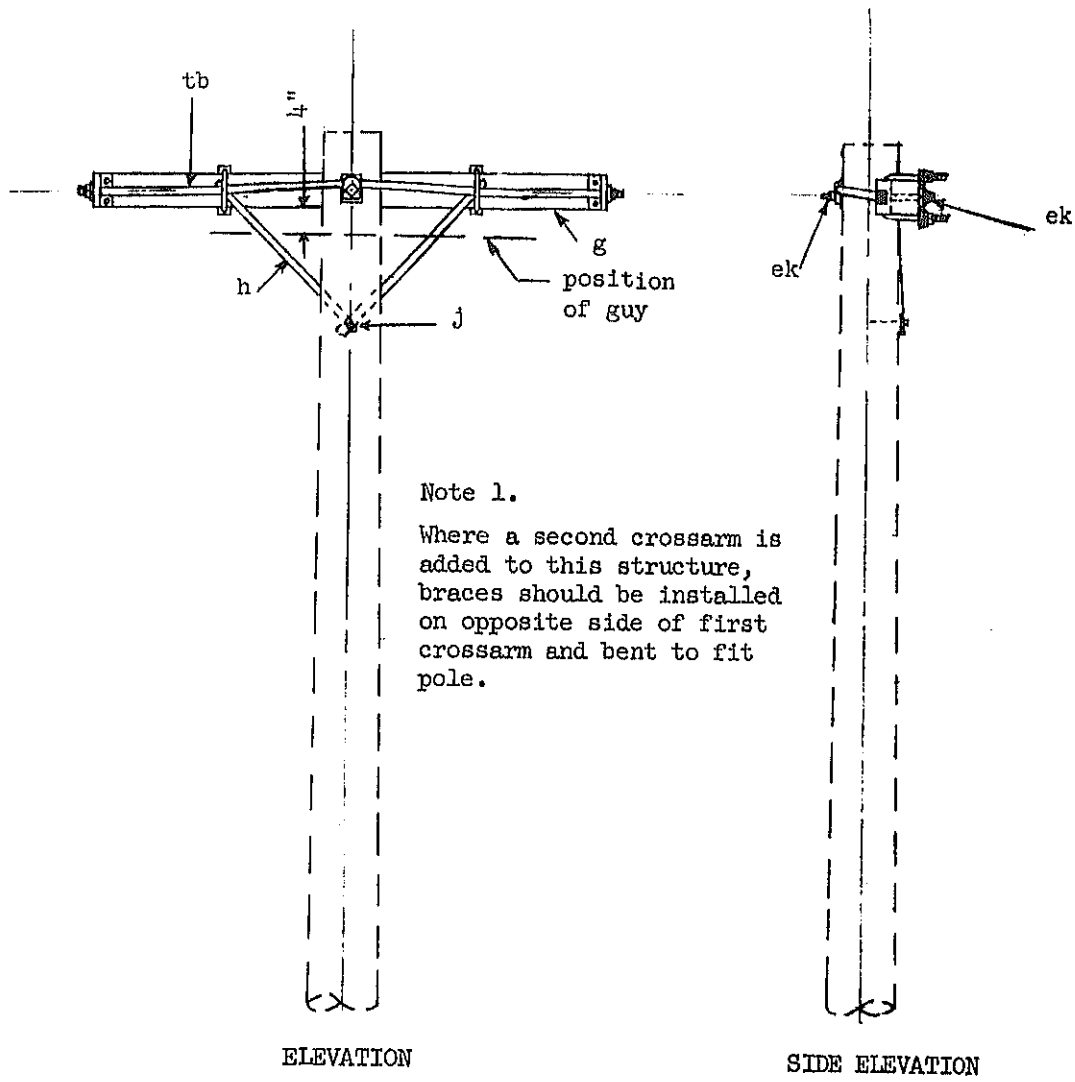
DEADEND, TWO SINGLE CROSSARMS (TYPE DET)

Scale: NTS

Sept. 26, 1958

PB5-7

Figure 32



ELEVATION

SIDE ELEVATION

Note 1.

Where a second crossarm is added to this structure, braces should be installed on opposite side of first crossarm and bent to fit pole.

Note 2: All hardware items not listed in materials list are supplied with back truss.

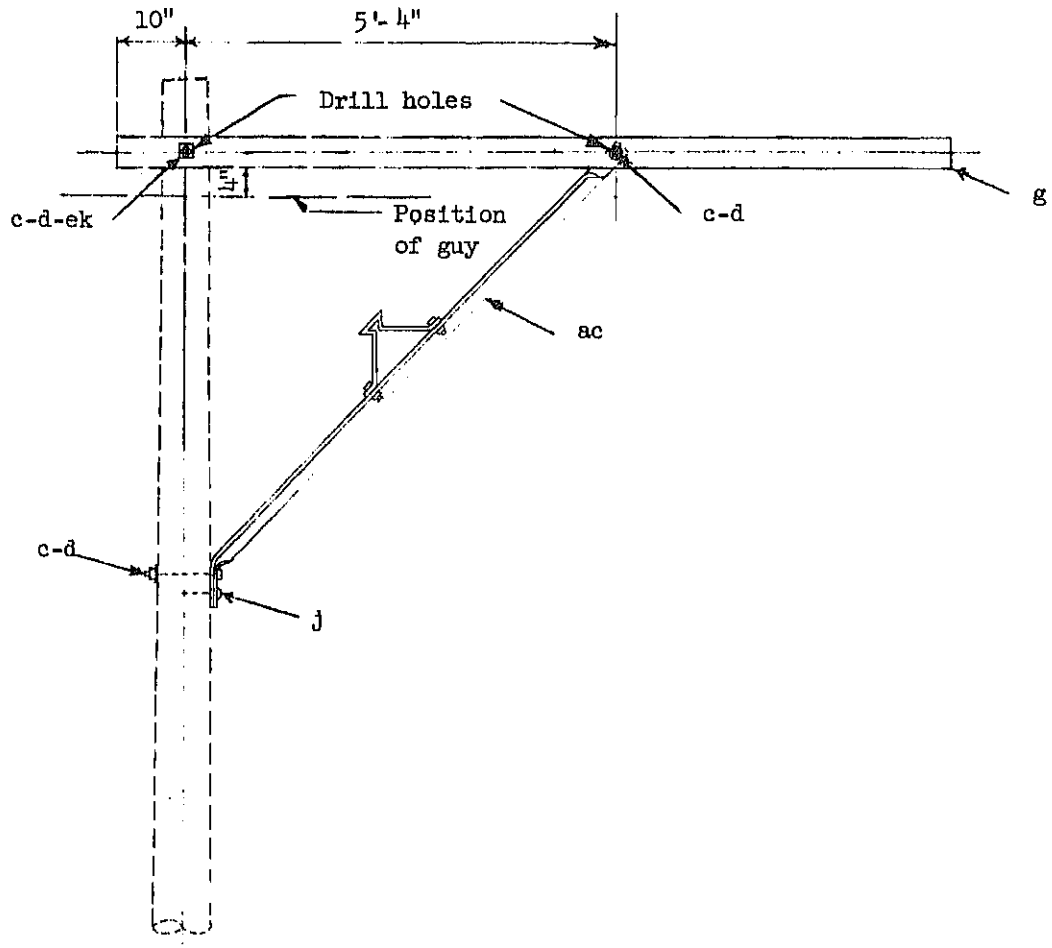
USED ON JOINT OR NON-JOINT DEADEND POLES. LIMITATIONS: MAXIMUM LONGITUDINAL PULL 1500 LBS. PER CONDUCTOR; AND NOT TO BE USED IN LINES USING THE REA-1 TRANSPOSITION SYSTEM. SEE FIGURES 36, 37, AND 38 FOR THESE EXCEPTIONS.

RURAL TELEPHONE CONSTRUCTION PRACTICES

DEADEND, SINGLE CROSSARM (TYPE DET)

Scale: N.T.S.		Jan. 17, 1956
		PB5-8

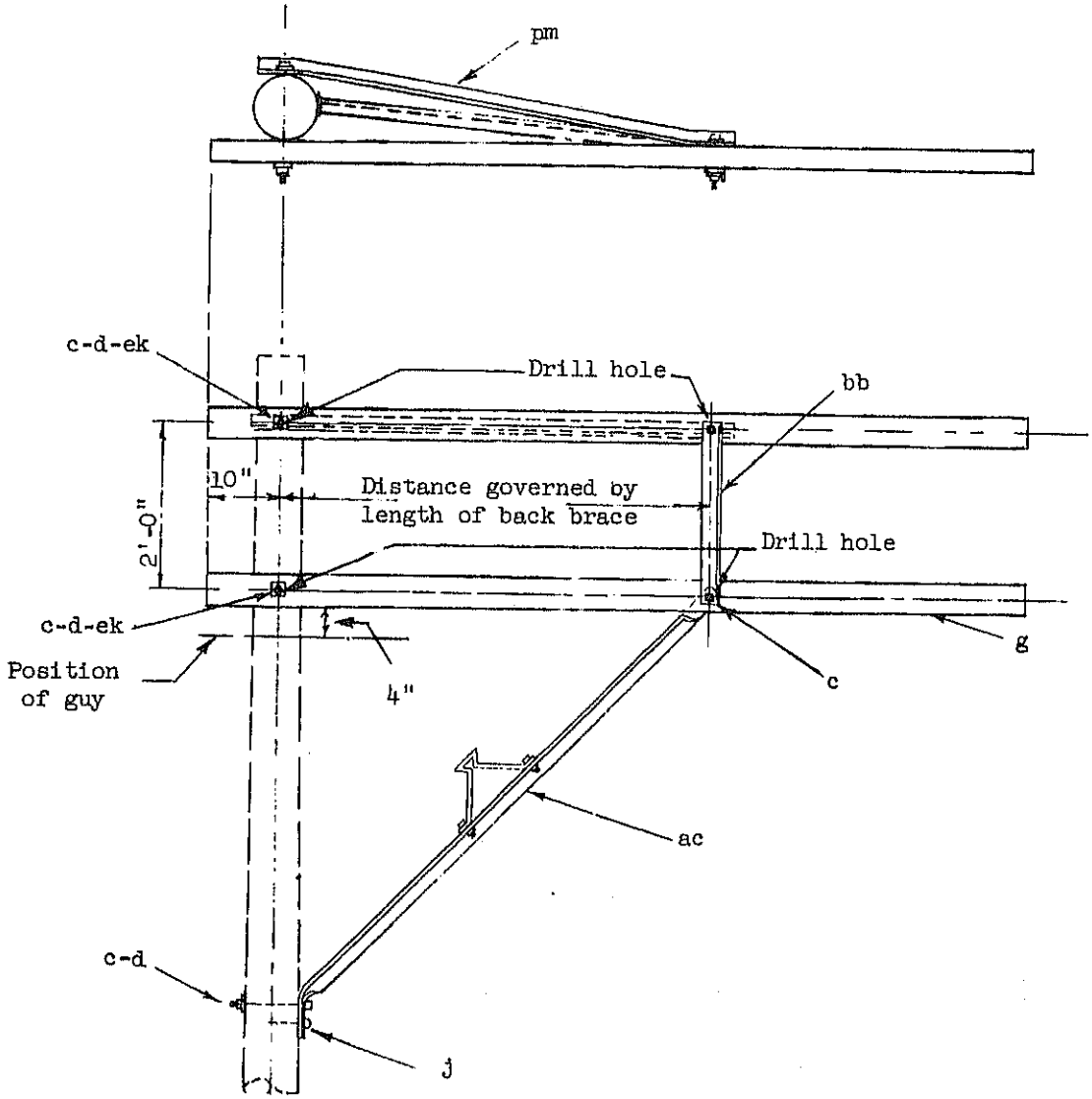
Figure 33



USED ON NON-JOINT POLES TO AVOID TREES OR OTHER OBSTRUCTIONS. LIMITATIONS: MAXIMUM CORNER 5 DEGREES WITHOUT GUY; 225 LBS. MAXIMUM CORNER 5 DEGREES WITHOUT GUY; 225 LBS. MAXIMUM VERTICAL LOAD PER CONDUCTOR; 10 PERCENT MAXIMUM DOWNWARD GRADE CHANGE. REQUIRES POLE ONE CLASS LARGER THAN OTHERS IN NON-JOINT LINES.

RURAL TELEPHONE CONSTRUCTION PRACTICES SINGLE 10-PIN SIDEARM (TYPE 10A)	
Scale: NTS	December 30, 1955
	PB5-9

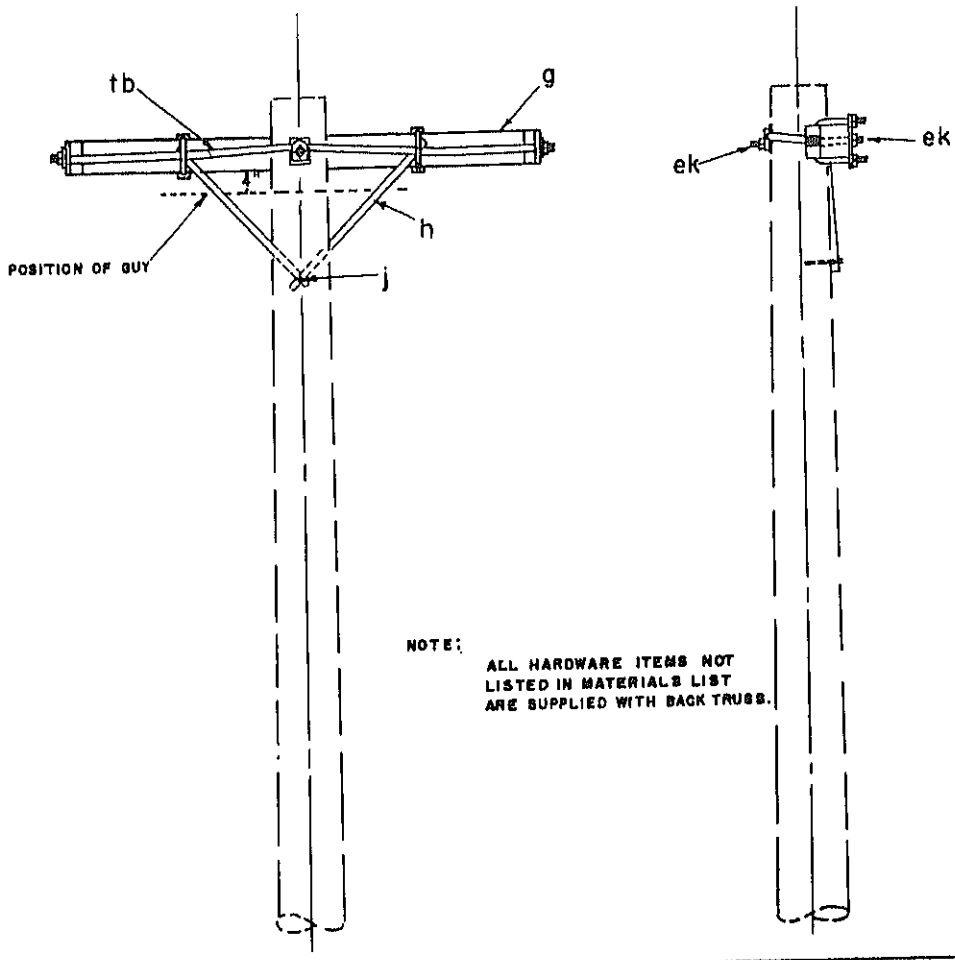
Figure 34



USED ON TWO CROSSARM NON-JOINT POLES TO AVOID TREES OR OTHER OBSTRUCTIONS. LIMITATIONS: MAXIMUM CORNER FIVE DEGREES WITHOUT GUY; 225 POUNDS MAXIMUM VERTICAL LOAD PER CONDUCTOR; TEN PERCENT MAXIMUM DOWNWARD GRADE CHANGE. REQUIRES POLE ONE CLASS LARGER THAN OTHERS IN NON-JOINT LINES.

	RURAL TELEPHONE CONSTRUCTION PRACTICES TWO SINGLE 10-PIN SIDEARMS (TYPE 10A)	
	Scale: NTS	January 18, 1956
		PR5-10

Figure 35



USED AS DEADENDS IN JOINT OR NON-JOINT CONSTRUCTION TRANSPOSED ACCORDING TO REA TE & CM-643, "REA-1 TRANSPOSITION SYSTEM."

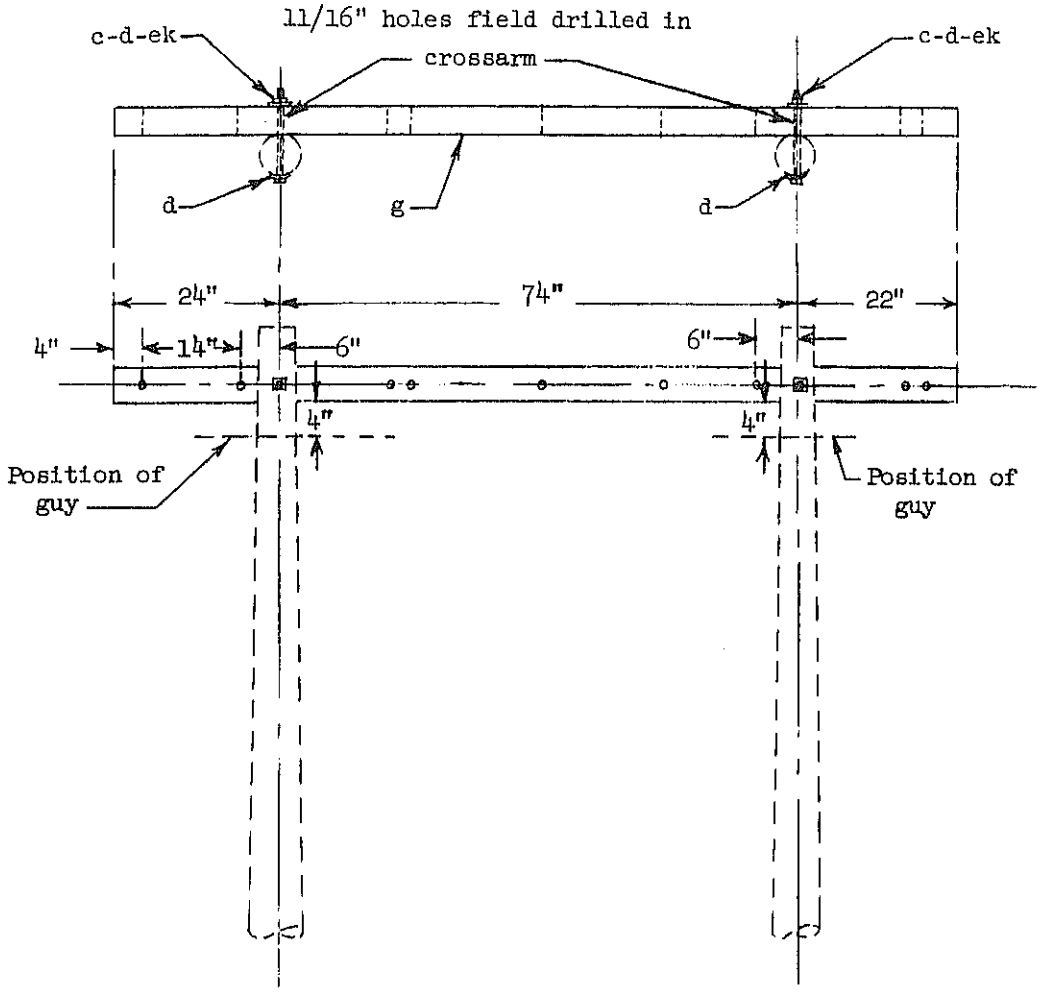
PB5-11 USED AS SHOWN IN FIGURE 2, REA TE & CM-643, DETA CROSSARMS.

PB5-12 USED AS SHOWN IN FIGURE 4, REA TE & CM-643, DETB CROSSARMS.

PB5-14 HAS NO APPLICATION AT PRESENT. DETD CROSSARMS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES DEADENDS, SINGLE CROSSARM (TYPES DETA, DETB, DETD)	
Scale: NTS		August 23, 1960
		PB5-11, -12, -14

Figure 36



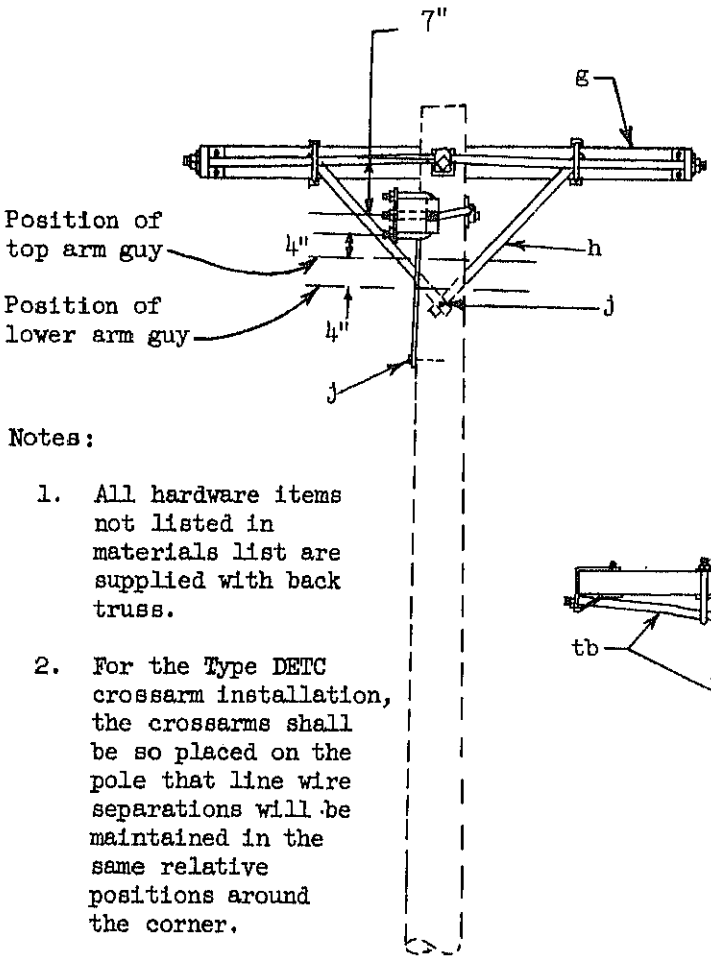
USED FOR DEADEND IN NON-JOINT LINE TRANSPOSED ACCORDING TO REA TE & CM-463, "REA-1 TRANSPOSITION SYSTEM," AS INDICATED ON FIGURE 3 THEREIN. IN TWO-CROSSARM CONSTRUCTION THE LOWER CROSSARM SHALL BE PLACED SO THAT THE 14 INCH PIN SPACING IS OPPOSITE (END-FOR-END) FROM THAT OF THE TOP CROSSARM.

RURAL TELEPHONE CONSTRUCTION PRACTICES

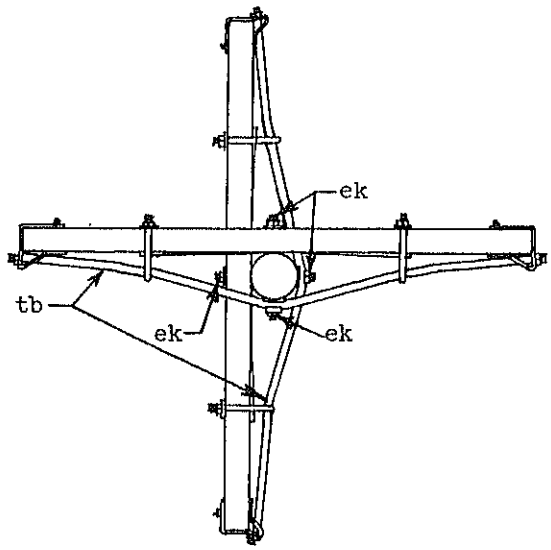
DEADEND, SINGLE CROSSARM (TYPE DE

Scale: NTS

Figure 37



WHERE ONE OF THE TWO SPANS HAS AN UP-PULL PLACE ITS CIRCUITS ON UPPER CROSSARM. IF ONE HAS A DOWN-PULL PLACE ITS CIRCUITS ON LOWER ARM. IF BOTH SPANS PULL UP OR DOWN ADJUST SEPARATION OF CROSSARMS TO GIVE INCREASED SEPARATION BETWEEN THE WIRES IN THE TWO SPANS.



Notes:

1. All hardware items not listed in materials list are supplied with back truss.
2. For the Type DETC crossarm installation, the crossarms shall be so placed on the pole that line wire separations will be maintained in the same relative positions around the corner.

USED AS DEADENDS IN JOINT OR NON-JOINT CONSTRUCTION TRANSPOSED ACCORDING TO REA TE & CM-463, "REA-1 TRANSPOSITION SYSTEM."

PB5-16 USED AS SHOWN ON FIGURE 2, REA TE & CM-643. DETA CROSSARMS.

PB5-17 USED AS SHOWN ON FIGURE 4, REA TE & CM-643. DETB CROSSARMS.

PB5-18 USED AS SHOWN ON FIGURE 3, REA TE & CM-643. DETC CROSSARMS. THIS UNIT CAN BE USED FOR EITHER TOP OR LOWER CROSSARM.

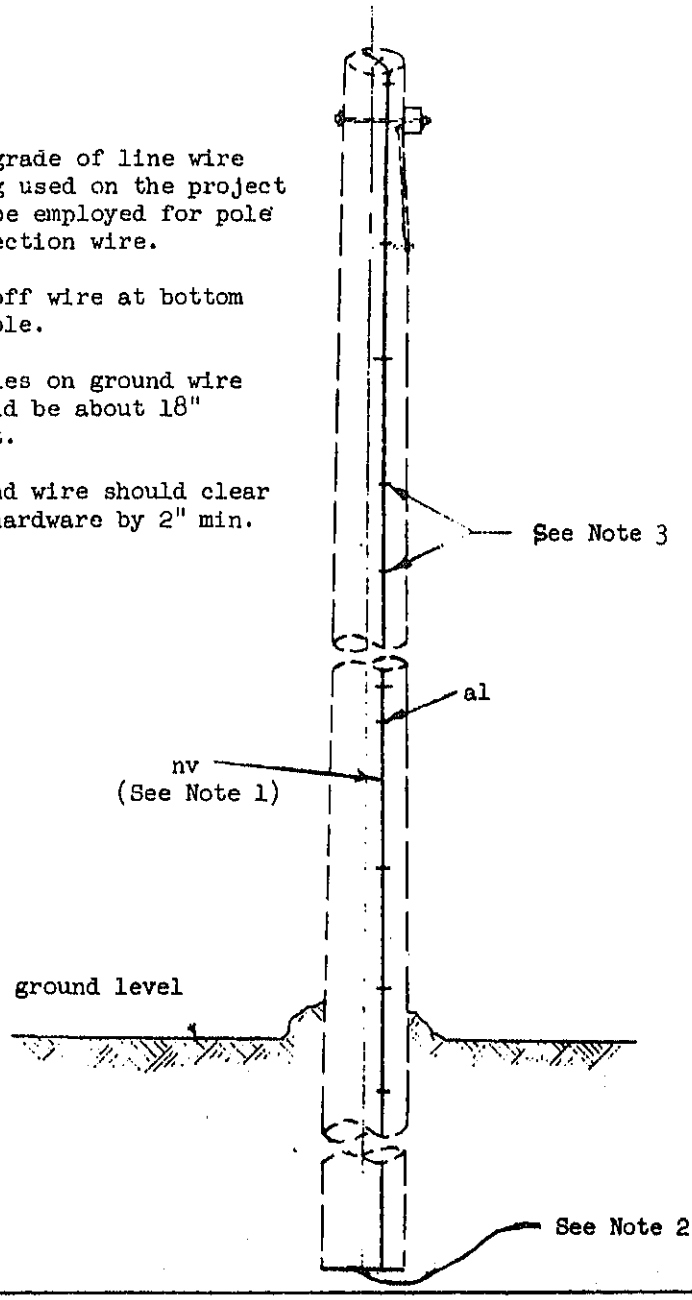
PB5-19 HAS NO APPLICATION AT PRESENT. DETD CROSSARMS.

REFER TO GUIDE DRAWING 702 FOR CLIMBING SPACE.

	RURAL TELEPHONE CONSTRUCTION PRACTICES DEADEND, TWO SINGLE CROSSARMS (TYPES DETA,DETB,DETC,DETD)	
	Scale: NTS	August 23, 1960
		PB5-16, -17, -18, -19

Figure 38

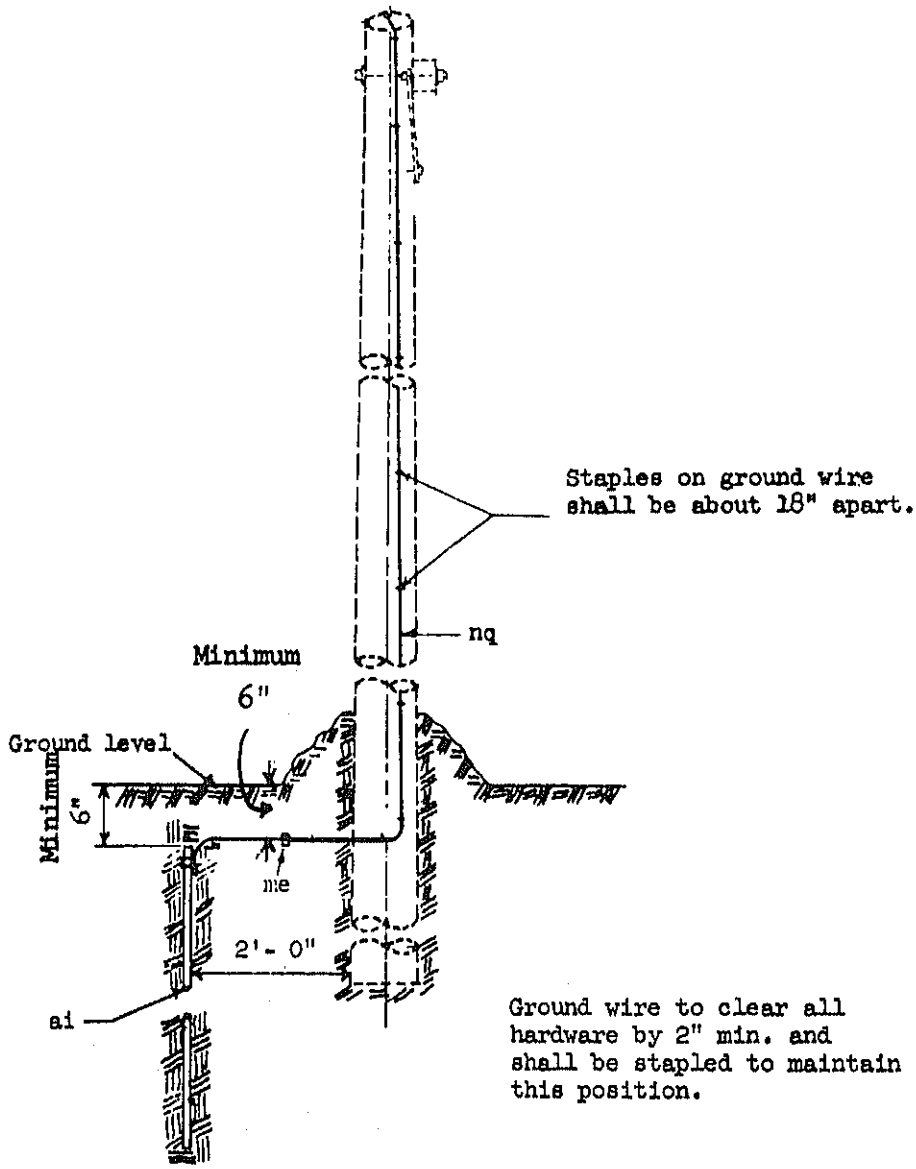
Notes:
1. Any grade of line wire being used on the project may be employed for pole protection wire.
2. Cut off wire at bottom of pole.
3. Staples on ground wire should be about 18" apart.
4. Ground wire should clear all hardware by 2" min.



USED TO PREVENT SPLITTING OF WOOD POLES BY LIGHTNING IN AREAS OF HIGH LIGHTNING INCIDENCE. SEE REA TE & CM-820, "OPEN WIRE CIRCUIT PROTECTION," FOR APPLICATION.

	RURAL TELEPHONE CONSTRUCTION PRACTICES POLE LIGHTNING PROTECTION ASSEMBLY	
	Scale: NTS	September 22, 1958
		PM1

Figure 39



USED PRIMARILY ON NON-JOINT POLES TO PROVIDE A GROUND FOR POLE OR CROSSARM-MOUNTED LIGHTNING ARRESTERS AND FOR DRAINAGE UNITS. FOR APPLICATIONS SEE REA TE & CM-830, "SUMMARY OF UNITS FOR ELECTRICAL PROTECTION."

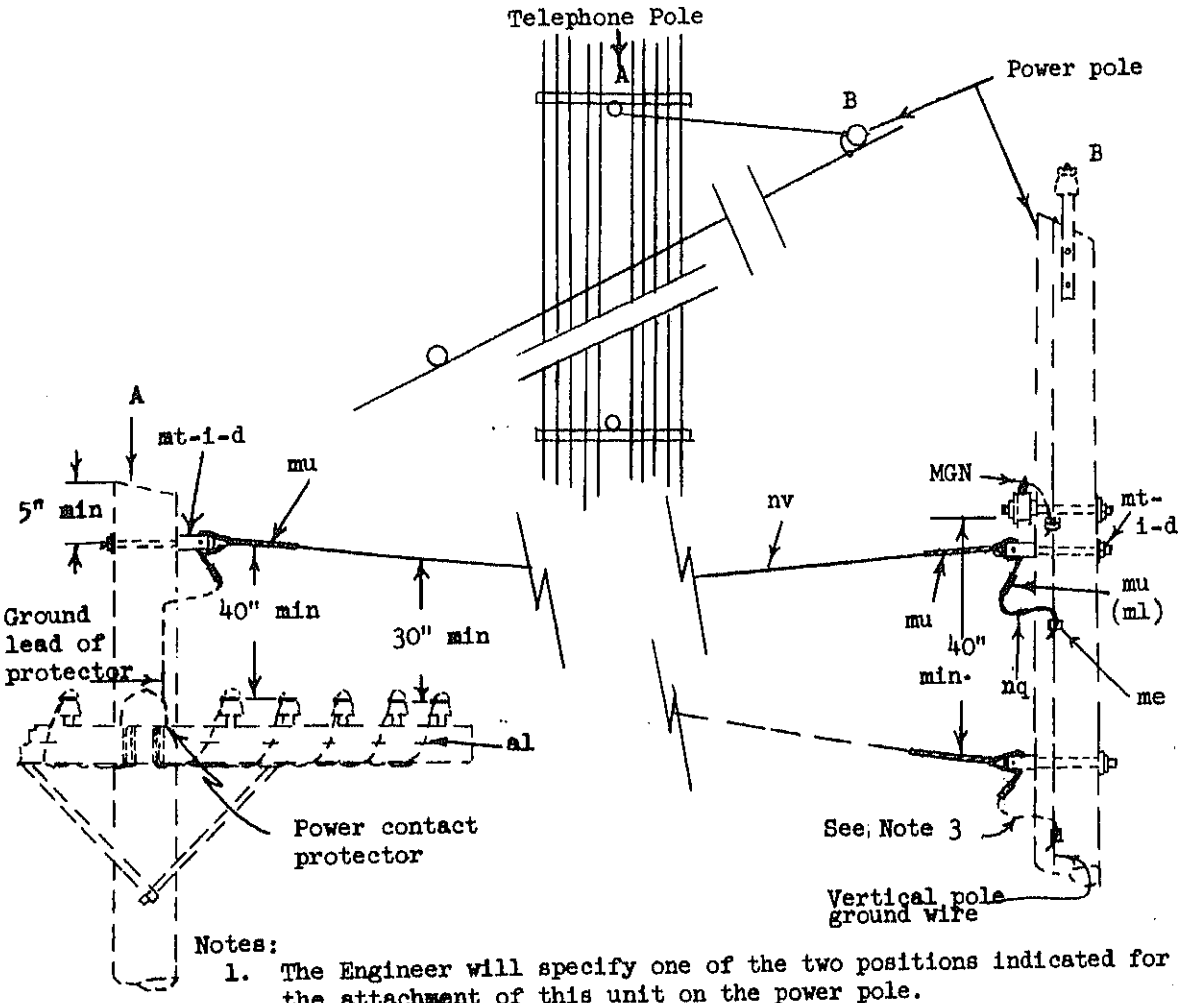
RURAL TELEPHONE CONSTRUCTION PRACTICES

POLE GROUND ASSEMBLY

Scale: N.T.S. | July 20, 1960

PM2

Figure 40



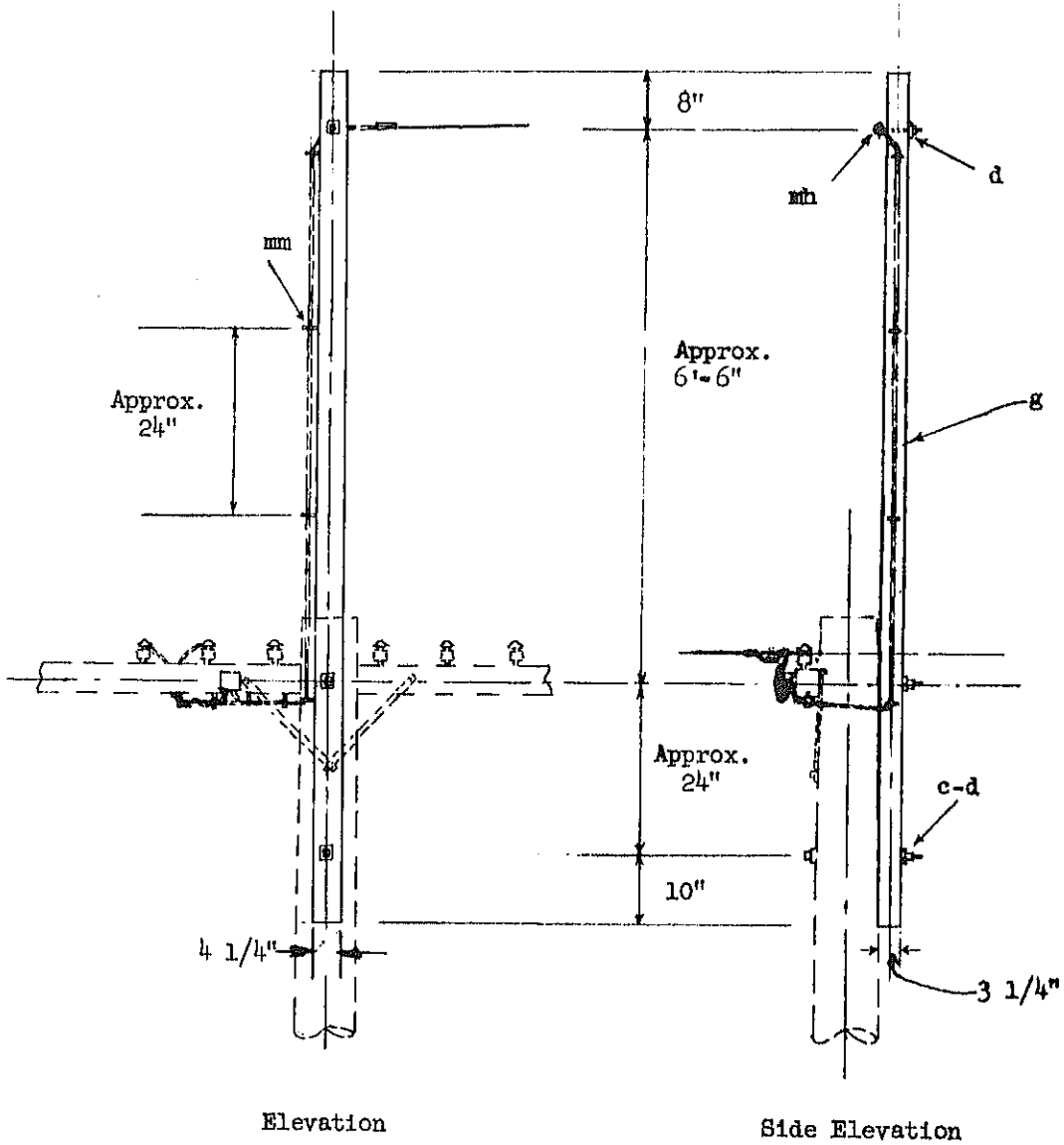
Notes:

1. The Engineer will specify one of the two positions indicated for the attachment of this unit on the power pole.
2. If the clevis on the power pole is to be placed in the upper position, the work of installing the clevis and making ground connection on the power pole shall be performed by a representative of the power company.
3. If the power pole is not already equipped with vertical pole ground wire, sufficient length of #10 AWG copper ground wire (item nq) shall be left coiled and taped to enable it to be extended up the pole and connected to a multi-grounded neutral by a representative of the power company.

USED AS AN AERIAL GROUND WIRE TO MAKE AN MGN AVAILABLE ON A TELEPHONE POLE AT INSPAN CROSSINGS WITH POWER LINES, FOR GROUNDING POWER CONTACT PROTECTORS. SEE REA TE & CM-820, "OPEN WIRE CIRCUIT PROTECTION" FOR APPLICATIONS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES AERIAL GROUND WIRE ASSEMBLY	
	Scale: NTS	February 28, 1962
		PM2B

Figure 41



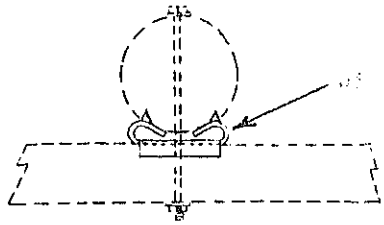
USED ONLY ON EXISTING POLES WHERE NECESSARY TO OBTAIN GROUND CLEARANCE FOR DROP WIRES ACROSS A HIGHWAY. THE CROSSARM MUST BE BORED ON THE JOB FOR THE POLE MOUNTING HOLES. TYPE 10A OR 10B CROSSARMS CAN BE USED FOR THIS UNIT. IN A NEW LINE THE POLE SELECTED SHOULD HAVE PROPER HEIGHT TO PROVIDE REQUIRED DROP WIRE GROUND CLEARANCE TO AVOID USE OF THIS UNIT.

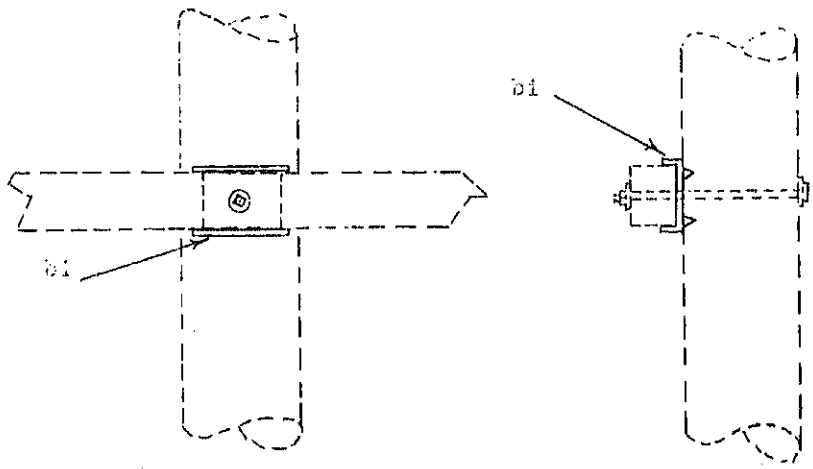
RURAL TELEPHONE CONSTRUCTION PRACTICES

POLE TOP EXTENSION

Scale: NTS		January 26, 1950
		PM3

Figure 42

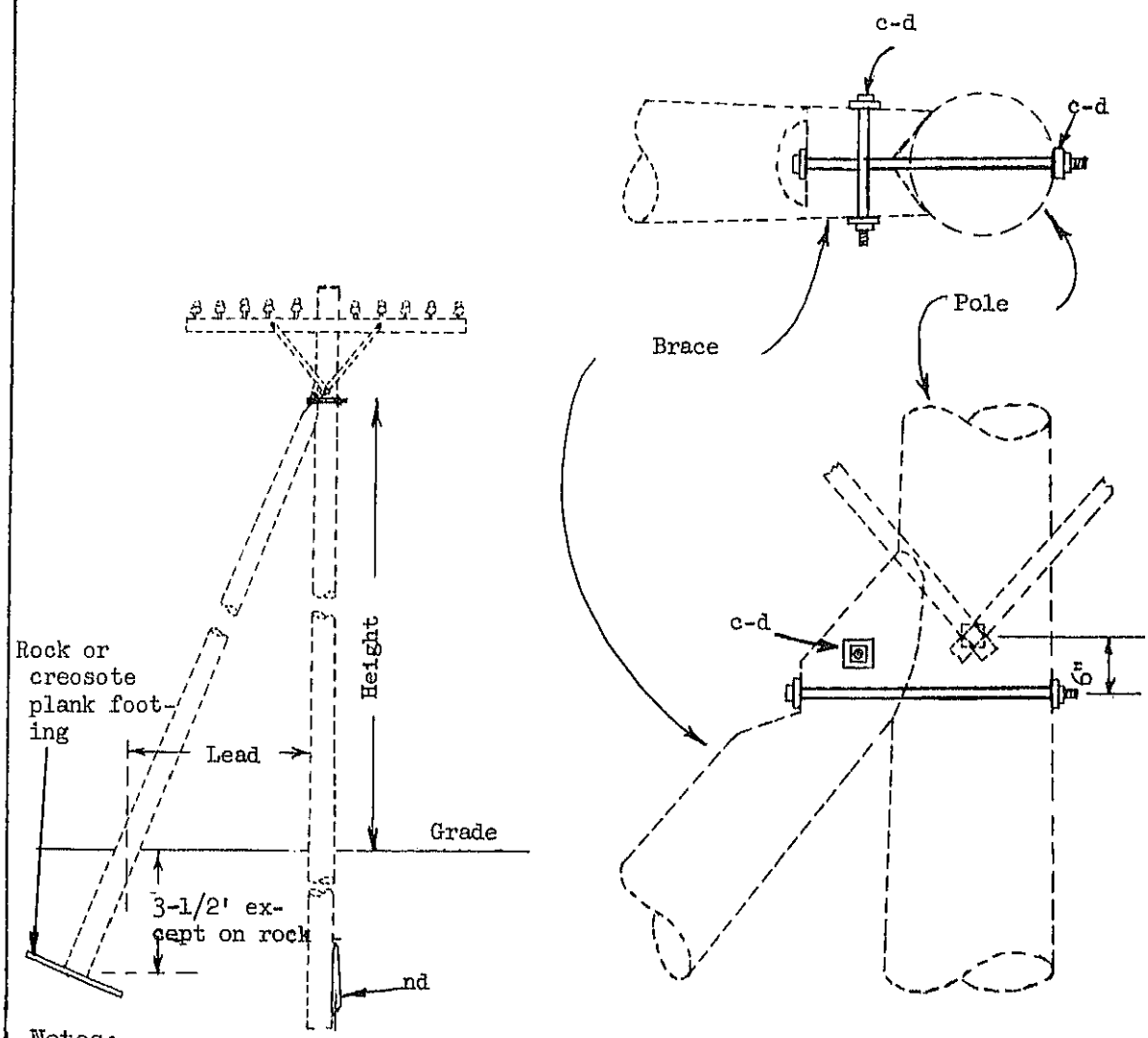




USED ON JOINT POLES; ALSO ON NON-JOINT POLES WHERE A SIX OR TEN PIN CROSSARM IS ADDED BELOW THE ORIGINAL GAINS; INTENDED TO AVOID CUTTING GAINS IN TREATED TIMBER.

	RURAL TELEPHONE CONSTRUCTION PRACTICES METAL POLE GAIN		
	Scale: N.T.S.		Oct. 6, 1954
			PM10

Figure 43



Notes:

1. Do not cut pole. Notch and frame brace to fit. Cut surfaces shall be painted with preservative. Brace shall be of same class as pole and is considered to be a pole unit.
2. Lead to height ratio not to be less than 1/3.
3. A prefabricated metal push brace bracket, item gb, installed in accordance with the manufacturer's recommendations may be used in lieu of the method shown.

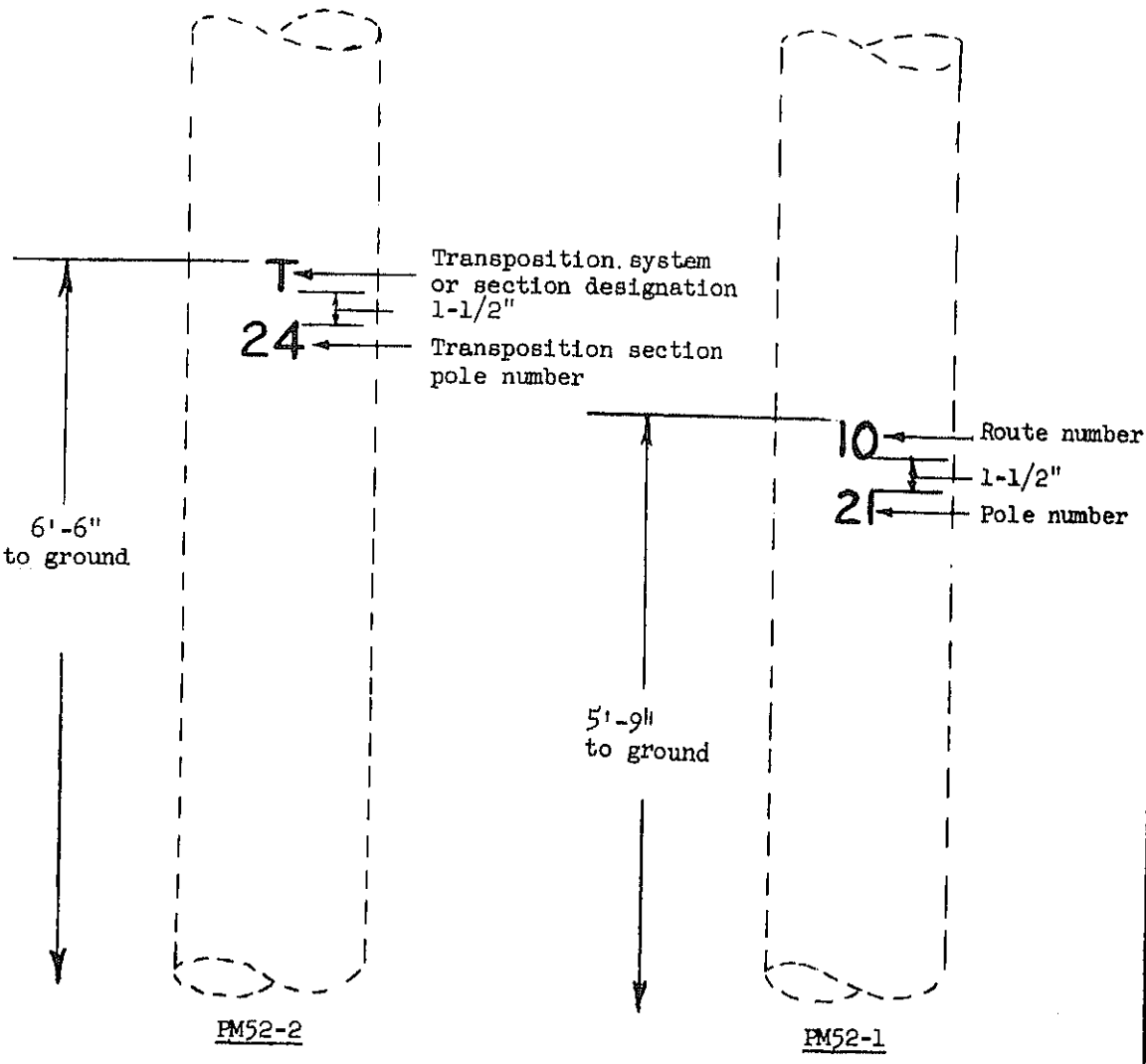
USED ONLY WHERE A DOWN GUY OR OVERHEAD GUY CANNOT BE PLACED.

RURAL TELEPHONE CONSTRUCTION PRACTICES

PUSH BRACE ACCESSORIES

Scale: NTS		February 20, 1962
		PM14

Figure 44

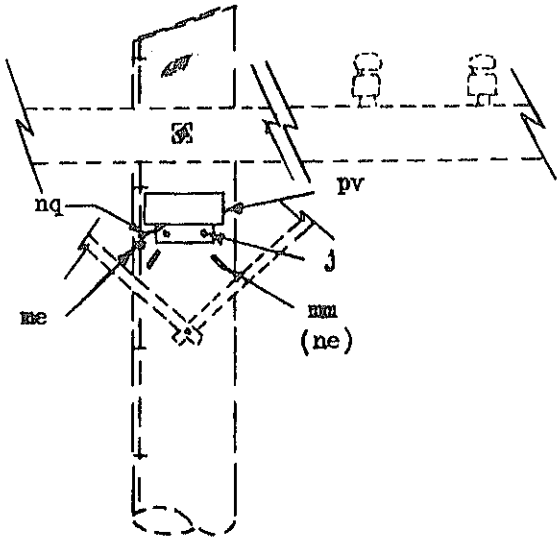


USED FOR INDICATING LOCATION OF POLES FOR PLANT RECORDS, FOR LOCATING TROUBLE, FOR SERVICE ORDER WORK LOCATION, AND FOR OTHER PROGRAMMED WORK ALONG A POLE LINE. SEE REA TE & CM-627, "ROUTE AND POLE NUMBERING."

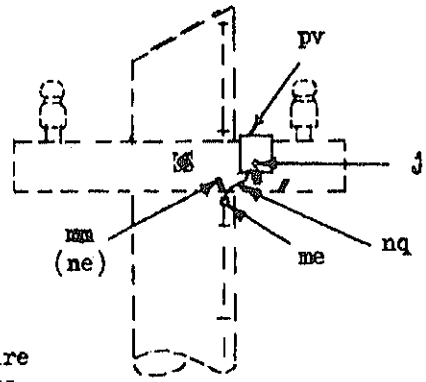
RURAL TELEPHONE CONSTRUCTION PRACTICES

POLE MARKING

Scale: NTS		January 18, 1962
		PM52-1, -2



P3-5



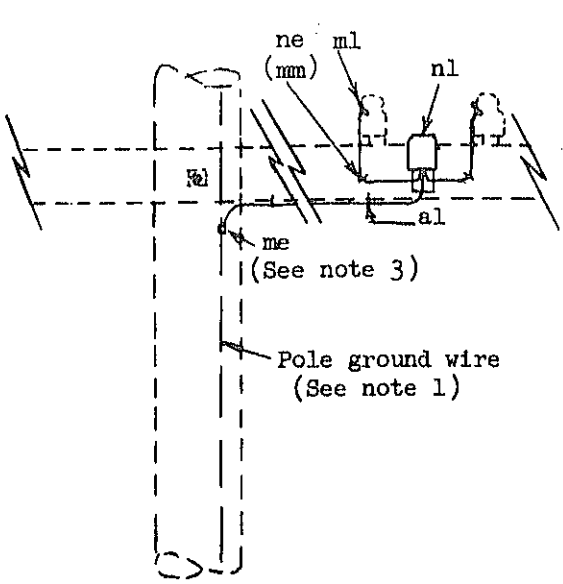
P3-1

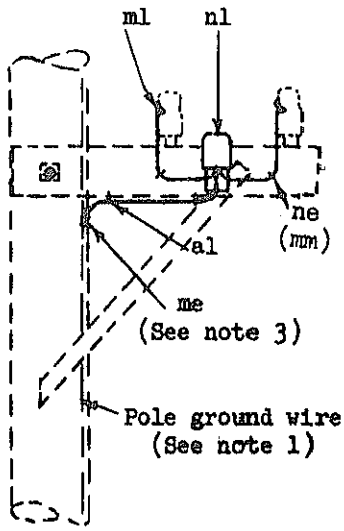
Note: These units include bridling from open wire to lightning arresters.

USED ON OPEN WIRE TELEPHONE CIRCUITS AS "BUFFER" PROTECTION FOR CONNECTED CABLE WHERE POWER CONTACT PROTECTORS ARE NOT USED ON SUCH LINES. USUAL LOCATION IS 1500 FEET FROM CABLE END. SEE REA TE & CM-815, "CABLE CIRCUIT PROTECTION," AND REA TE & CM-820, "OPEN WIRE CIRCUIT PROTECTION."

RURAL TELEPHONE CONSTRUCTION PRACTICES LIGHTNING ARRESTERS (SINGLE PAIR AND FIVE PAIRS)		
Scale: NTS		March 1, 1962
		P3-1, -5

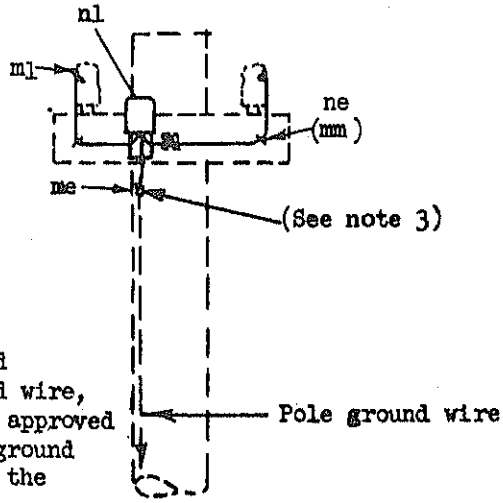
Figure 46





Notes:

1. If pole is not already equipped with a vertical pole ground wire, leave sufficient length of #10 AWG copper ground wire (item nq) connected to the ground lead of the protector and coiled and taped so that it may be extended up the pole and connected to a multigrounded neutral by a representative of the power company.
2. Hardware for mounting the protector shall be in accordance with the manufacturer's recommendations and is included in this assembly unit.
3. If PM2B unit is specified and ground lead of protector will not reach aerial ground wire, extend ground lead by joining it with an approved connector to a length of #10 Awg copper ground wire which in turn shall be connected to the aerial ground wire.



USED ON AN OPEN WIRE TELEPHONE CIRCUIT FOR PROTECTION AGAINST POWER CONTACTS. SEE REA TE & CM-820, "OPEN WIRE CIRCUIT PROTECTION," FOR APPLICATIONS.

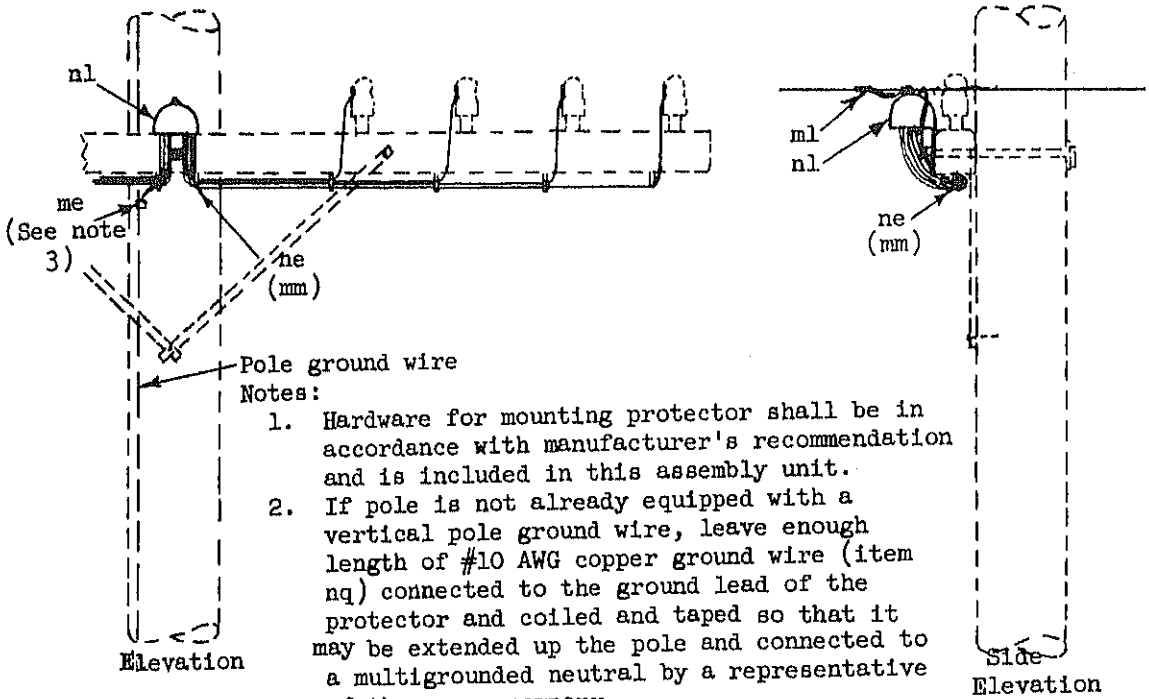
RURAL TELEPHONE CONSTRUCTION PRACTICES
OPEN WIRE POWER CONTACT PROTECTOR
(SINGLE PAIR)

Scale: NTS

January 18, 1962

P4-1

Figure 47



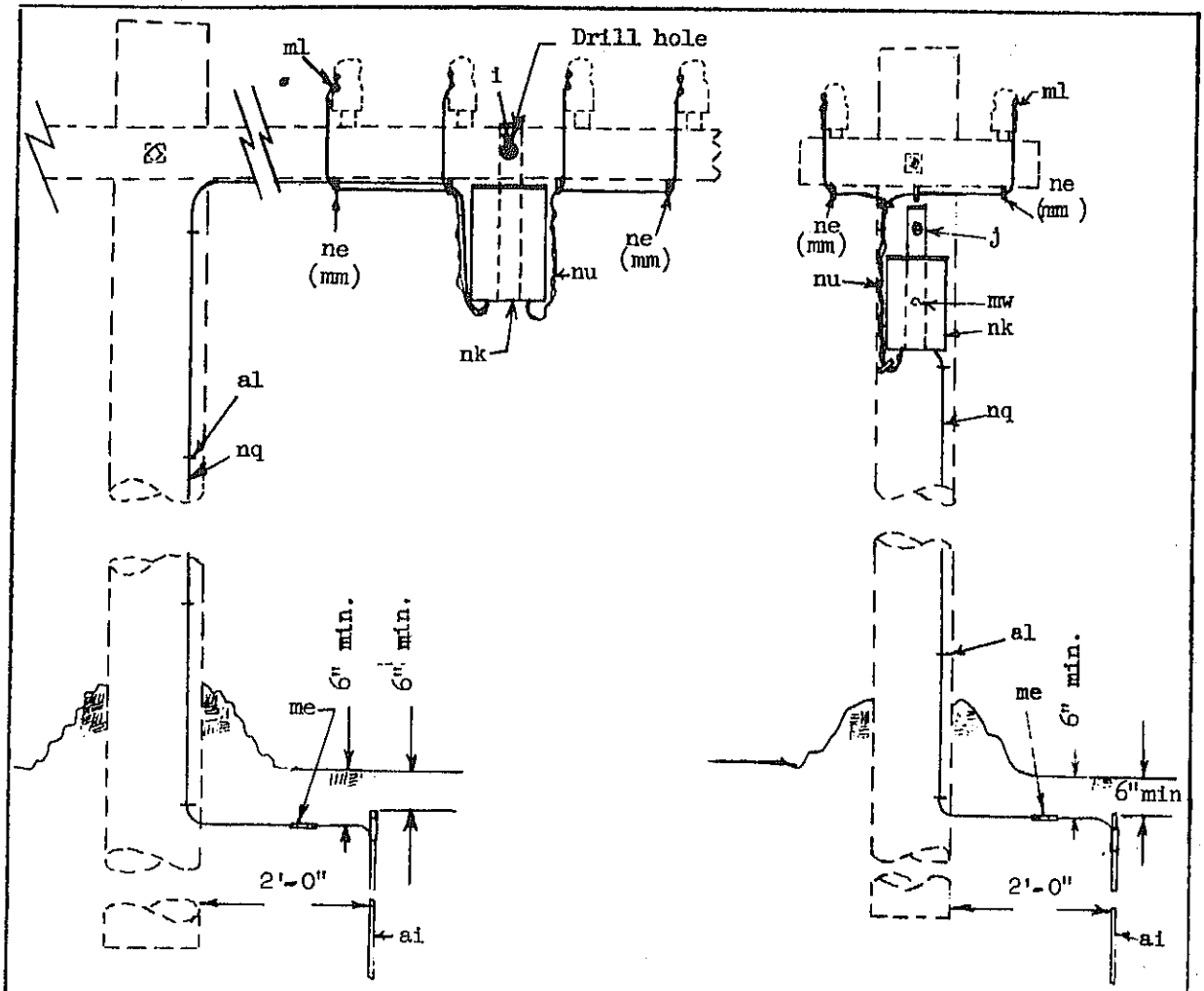
Notes:

1. Hardware for mounting protector shall be in accordance with manufacturer's recommendation and is included in this assembly unit.
2. If pole is not already equipped with a vertical pole ground wire, leave enough length of #10 AWG copper ground wire (item nq) connected to the ground lead of the protector and coiled and taped so that it may be extended up the pole and connected to a multigrounded neutral by a representative of the power company.
3. If PM2B unit is specified and ground lead of protector will not reach aerial ground wire, extend ground lead by joining it with an approved connector to a length of #10 AWG ground wire which in turn shall be connected to the aerial ground wire.

USED ON OPEN WIRE TELEPHONE CIRCUITS FOR PROTECTION AGAINST POWER CONTACTS. SEE REA TE & CM-820, "OPEN WIRE CIRCUIT PROTECTION," FOR APPLICATIONS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES OPEN WIRE POWER CONTACT PROTECTOR (FIVE PAIRS)	
	Scale: NTS	January 18, 1962
		P 4-5

Figure 48



P5-1 Assembly Unit	
Crossarm Mounted	Pole Mounted

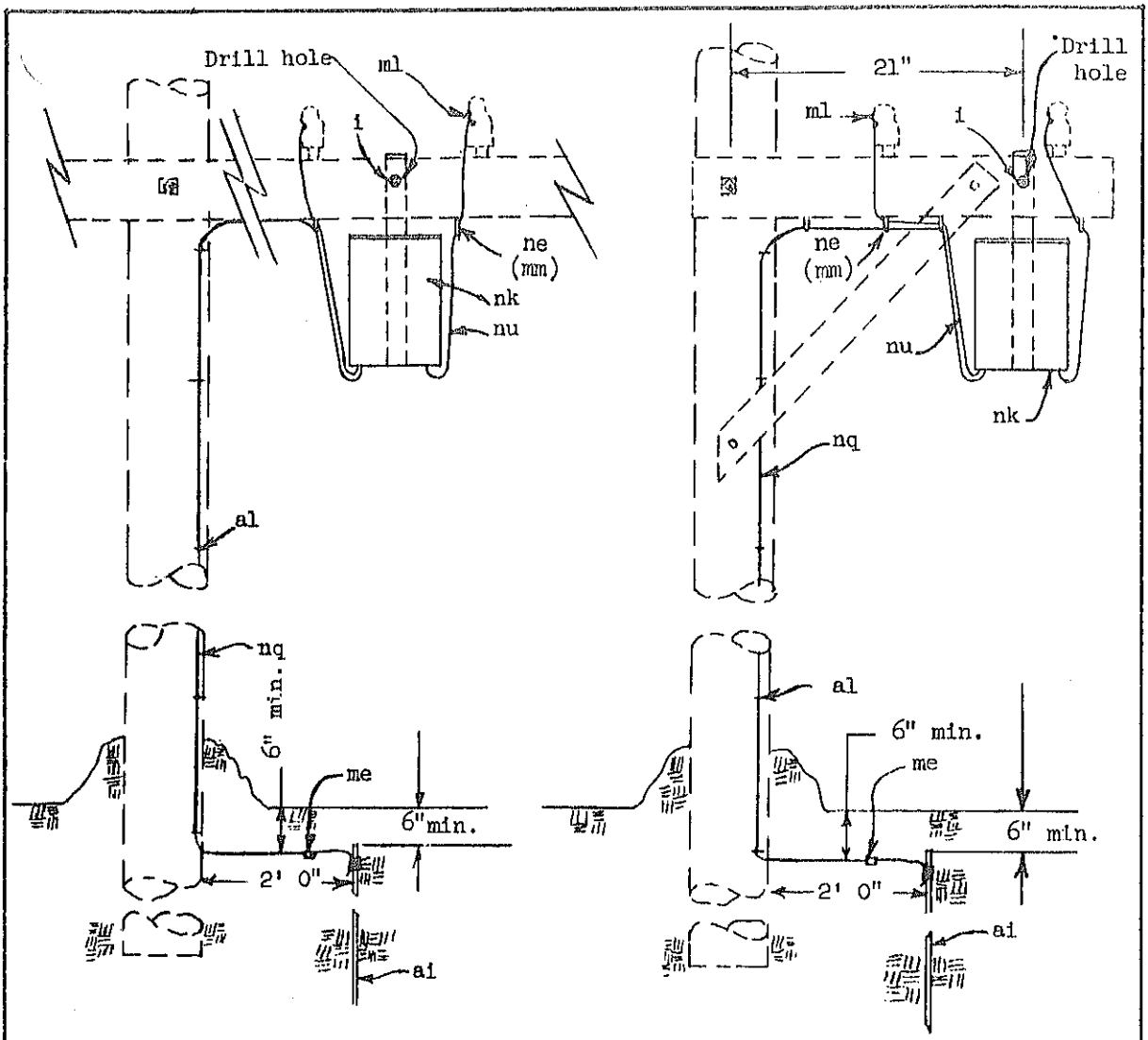
USED TO PROVIDE DRAINAGE PROTECTION TO ONE OR TWO OPEN WIRE CIRCUITS WHICH PARALLEL POWER LINES AT ROADWAY SEPARATION, SEE REA TE & CM-820, "OPEN WIRE CIRCUIT PROTECTION" FOR APPLICATIONS.

RURAL TELEPHONE CONSTRUCTION PRACTICES

DRAINAGE UNIT (CAPACITOR-RESISTOR TYPE)
NONJOINT USE

Scale: NTS		January 18, 1962
		P5-1

Figure 49



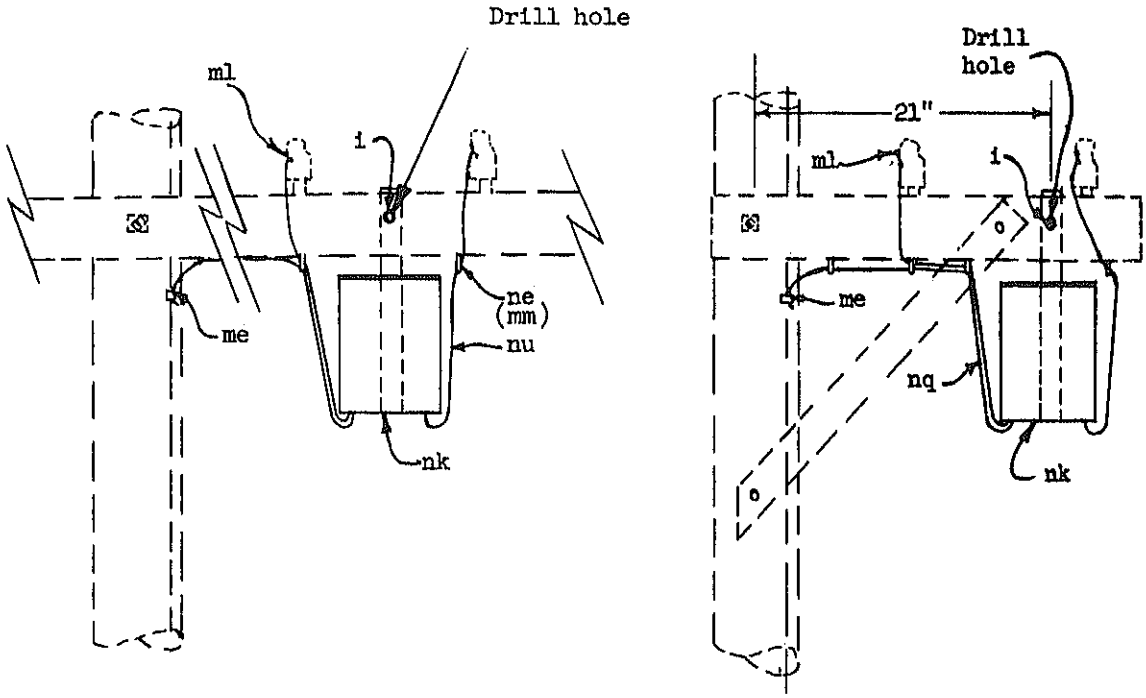
USED TO PROVIDE DRAINAGE PROTECTION ON ONE JOINT USE OPEN WIRE CIRCUIT ON POLES CARRYING OTHER THAN MGN TYPE POWER CIRCUITS. SEE REA TE & CM-820, "OPEN WIRE CIRCUIT PROTECTION," FOR APPLICATIONS.

RURAL TELEPHONE CONSTRUCTION PRACTICES

DRAINAGE UNIT (INDUCTOR-CAPACITOR TYPE)
JOINT USE (CONNECTION TO GROUND ROD)

Scale: NTS		January 18, 1962
		P6-1A

Figure 50

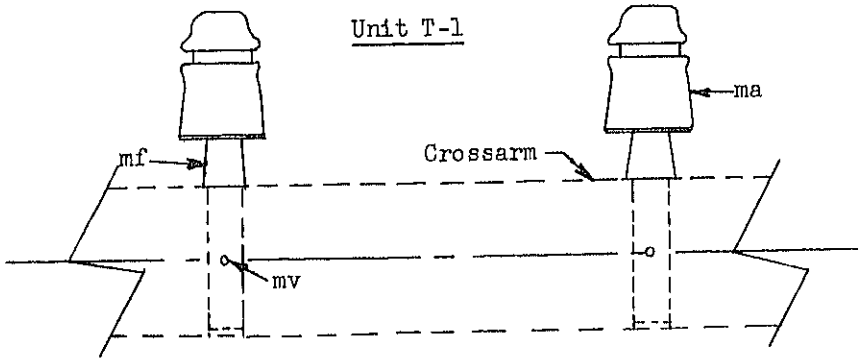


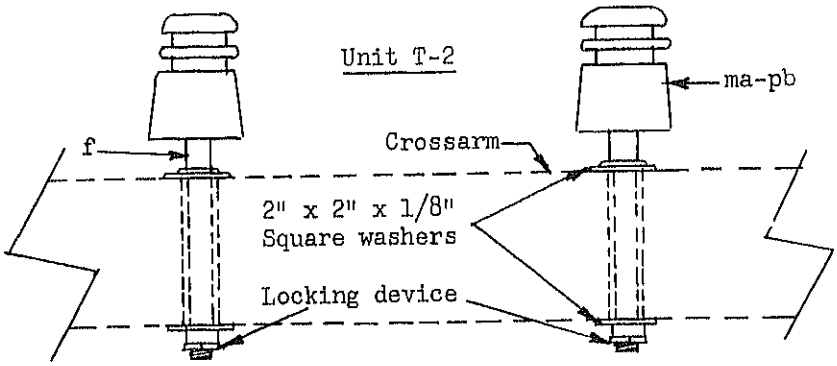
Note: If pole is not already equipped with a vertical pole ground wire, leave enough length of #10 AWG copper ground wire (item "nq") coiled and taped so that it may be extended up the pole and connected to a multigrounded neutral by a representative of the power company.

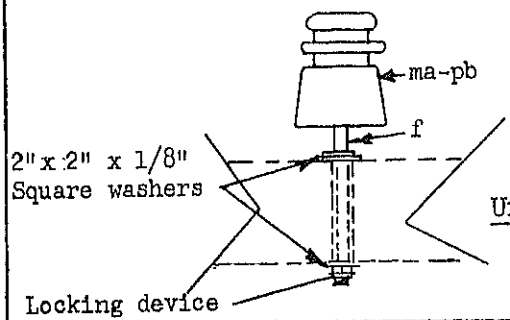
USED TO PROVIDE DRAINAGE PROTECTION ON ONE JOINT USE OPEN WIRE CIRCUIT ON POLES CARRYING MGN TYPE POWER CIRCUITS. SEE REA TE & CM-820, "OPEN WIRE CIRCUIT PROTECTION," FOR APPLICATIONS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES DRAINAGE UNIT (INDUCTOR-CAPACITOR TYPE) JOINT USE (CONNECTION TO MGN)	
	Scale: NTS	January 18, 1962
		P6-1C

Figure 51







Note: Washers and locking device furnished with long shank steel pin. When steel pins are mounted in holes drilled for wood pins, use locust bushings.

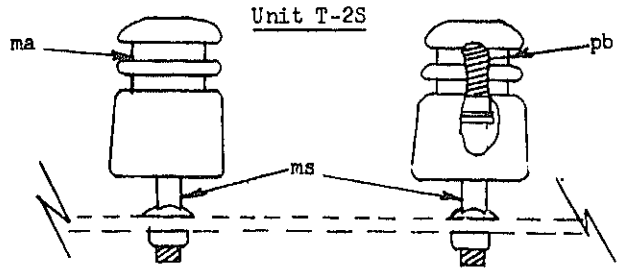
T-1 USED ON SINGLE CROSSARMS WHERE THE MAXIMUM TRANSVERSE LOAD (CORNER PULL) PER CONDUCTOR IS 500 LBS., AND ON EACH CROSSARM IN DOUBLE ARM CONSTRUCTION WHERE THE TRANSVERSE LOAD IS 500 to 750 LBS. PER CONDUCTOR.

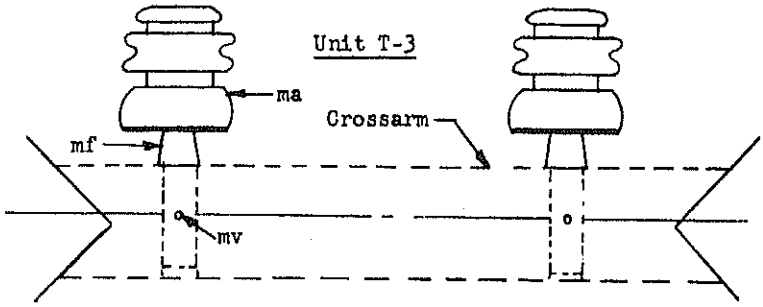
T-2 USED ON SINGLE CROSSARMS WHERE THE TRANSVERSE LOAD (CORNER PULL) PER CONDUCTOR IS 500 TO 1000 LBS., AND ON EACH CROSSARM IN DOUBLE ARM CONSTRUCTION WHERE THE TRANSVERSE LOAD (CORNER PULL) IS 1750 LBS. MAXIMUM PER CONDUCTOR.

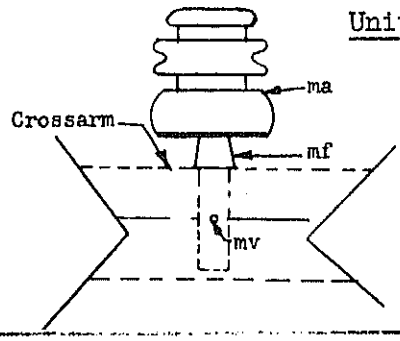
T-2A USED AS PINCH-IN WIRE SUPPORT IN TANGENT CONSTRUCTION AS SHOWN IN REA TE & CM-643, "REA-1 TRANSPOSITION SYSTEM"; ALSO FOR NON-TRANSPOSITION POINTS AT CORNERS OVER 35 DEGREES. MAXIMUM TRANSVERSE LOAD (CORNER PULL) IS 1000 LBS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES PIN AND INSULATOR UNITS	
	Scale: NTS	February 19, 1962 T-1, T-2, T-2A

Figure 52







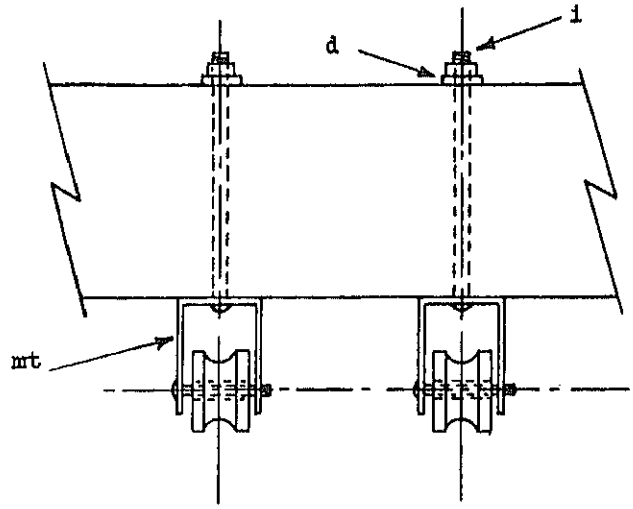
T-2S USED ON STEEL SUPPORT BRACKETS PA1-6 AND PA2-4 IN INSULATED LINE WIRE CONSTRUCTION. LIMITATION: MAX. CORNER 20°.

T-3 USED WITH PB1-1A OR PB1-3 ASSEMBLY UNITS AS A TANDEM TRANSPOSITION IN JOINT AND NON-JOINT TWO-WIRE LINES. ON DOUBLE ARMED POLES THIS UNIT CAN BE USED TO FORM A TANDEM TRANSPOSITION, PLACING ONE PIN IN EACH ARM AND USING TANDEM TYPE INSULATORS ON EACH PIN EXCEPT AT CORNERS EXCEEDING 35°. LIMITATIONS: MAX. TRANSVERSE LOAD PER CONDUCTOR 500 LBS.

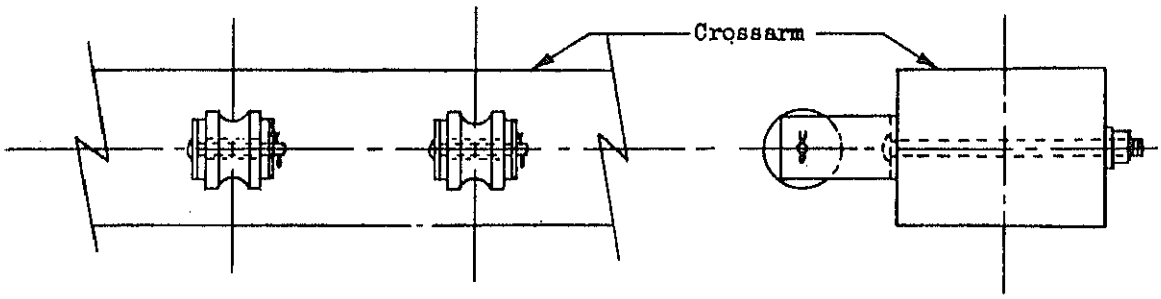
T-3A USED AS PINCH-IN WIRE SUPPORT IN TANGENT CONSTRUCTION AND CORNERS UNDER 35°: MAX. TRANSVERSE LOAD 500 LBS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES PIN AND TRANSPOSITION INSULATOR UNITS	
	Scale: NTS	February 19, 1962
		T-2S, T-3, T-3A

Figure 53



Plan



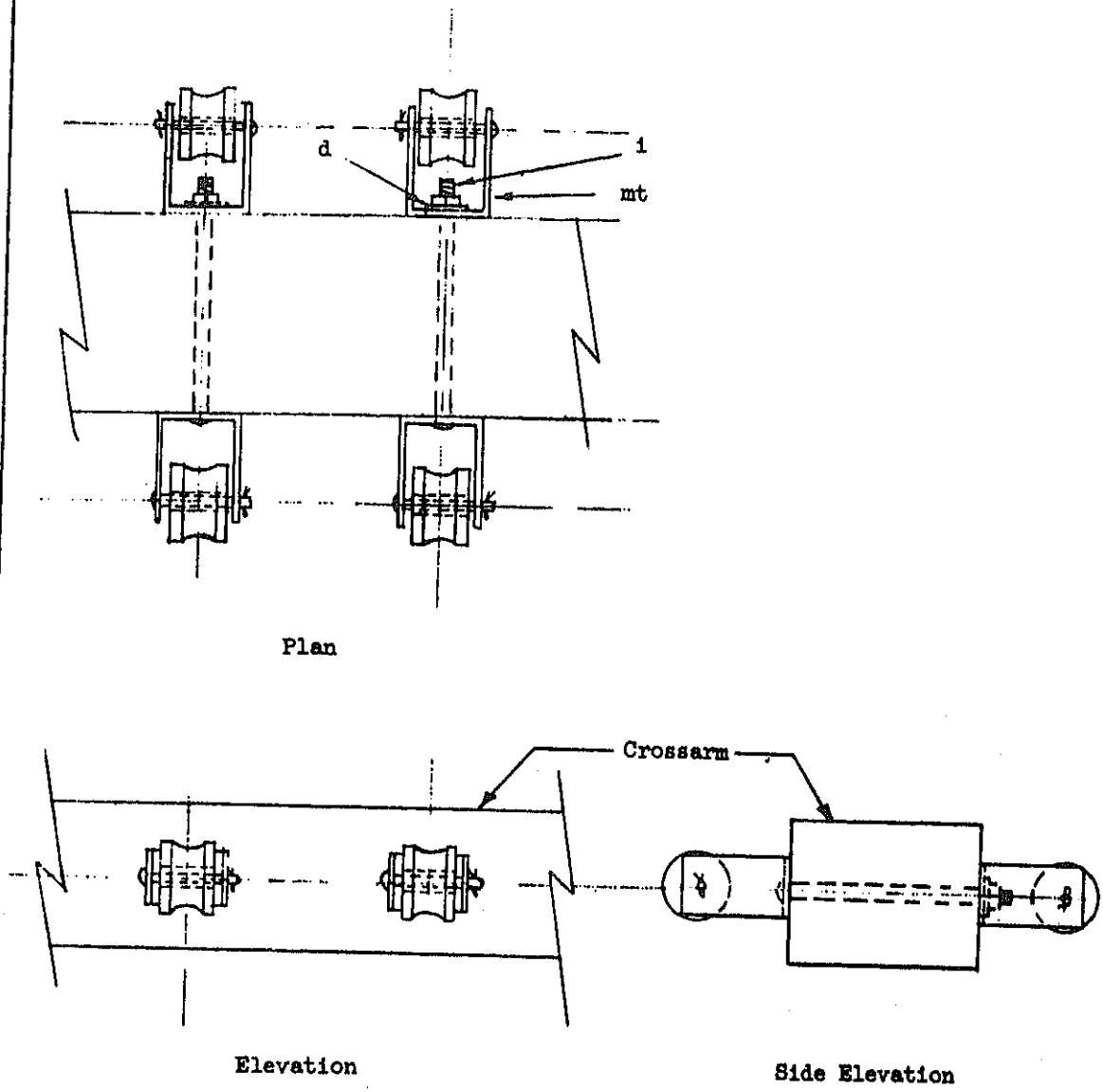
ELEVATION

SIDE ELEVATION

USED FOR DEADENDING CIRCUITS ON A CROSSARM WHERE THE WIRE PULL ON EACH INSULATOR KNOB WILL NOT EXCEED 1500 LBS. SEE GUIDE DRAWINGS 165 AND 165-1, ALSO PB1-6 AND PB1-7.

	RURAL TELEPHONE CONSTRUCTION PRACTICES
	TWO WIRE FLAT DEAD-END
Scale: N.T.S.	Jan. 12, 1956
	T-5

Figure 54



USED FOR DEADENDING CIRCUITS IN BOTH DIRECTIONS ON A CROSSARM AND THE WIRE PULL ON EACH INSULATOR KNOB WILL NOT EXCEED 1500 LBS; ALSO FOR DEADENDING BOTH WAYS WHERE DOWNWARD PULL EXCEEDS 25 PERCENT. SEE PB1-6 and PB1-7 AND GUIDE DRAWINGS 165 AND 165-1.

RURAL TELEPHONE CONSTRUCTION PRACTICES

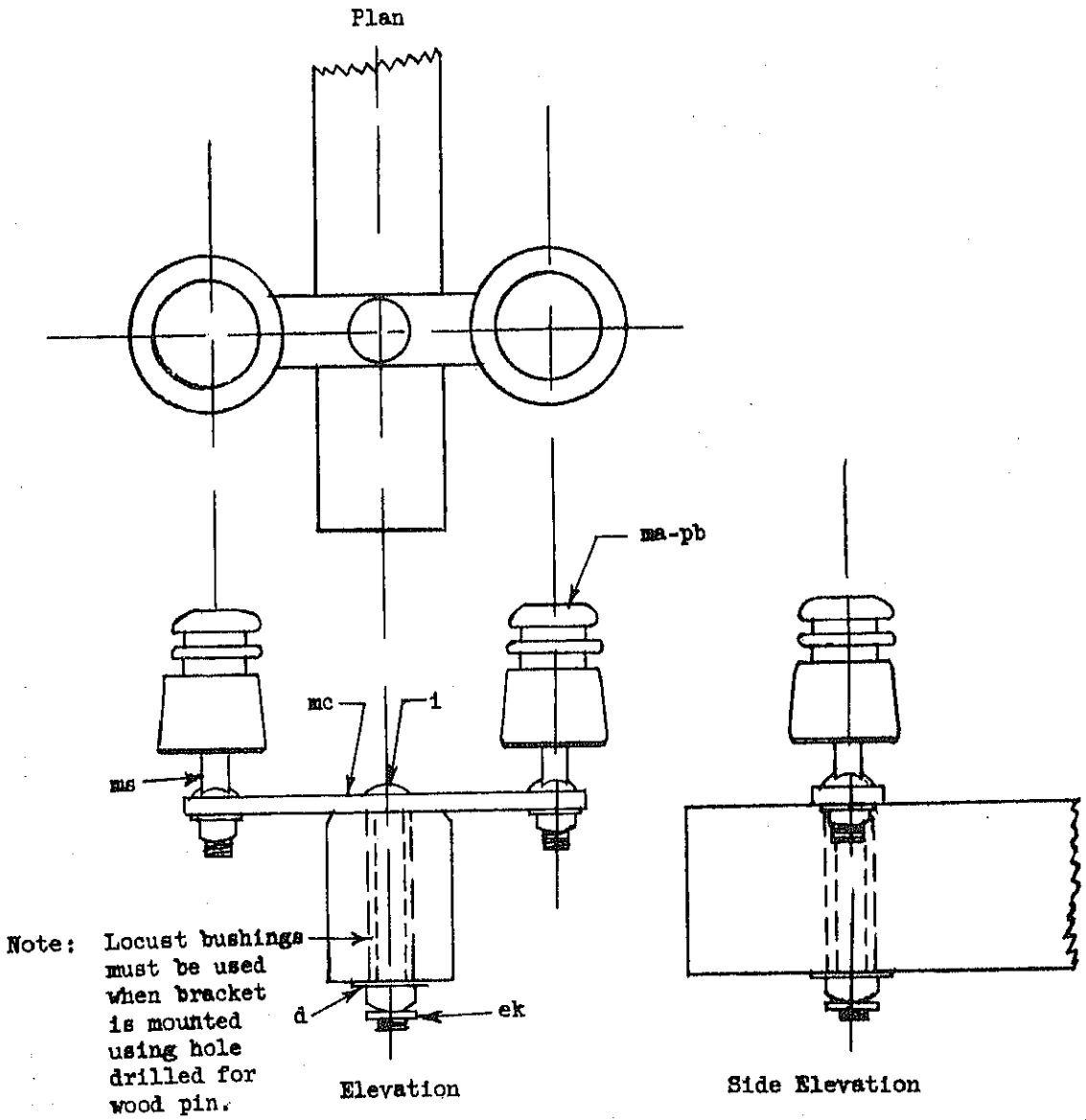
DOUBLE TWO WIRE FLAT DEADEND

Scale: NTS

January 19, 1956

T-5A

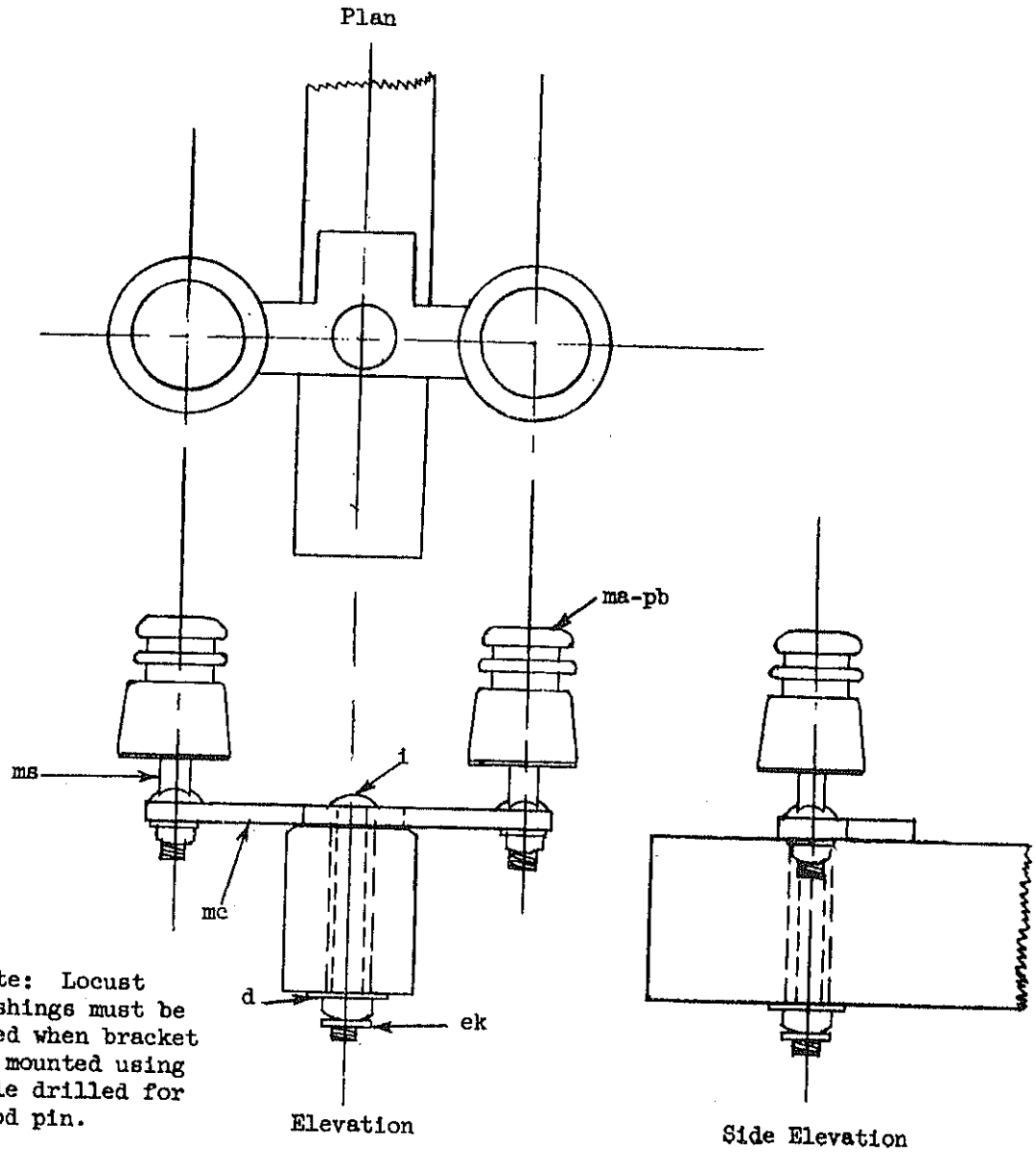
Figure 55



USED AS A TANDEM TRANSPOSITION FOR LINES IN NON-WINDY AREAS NOT REQUIRING POINT TRANSPOSITIONS, WHERE THE TRANSVERSE LOAD (CORNER PULL) DOES NOT EXCEED 500 LBS. PER CONDUCTOR, PARTICULARLY ON LINES USING THE T-1 ASSEMBLY UNITS (WOOD PINS) AT NON-TRANSPOSITION POINTS. CORNERS SHOULD NOT EXCEED 35 DEGREES AT POLES EQUIPPED WITH THIS UNIT. SEE REA TE & CM-615 AS TO REQUIREMENTS FOR POINT TRANSPOSITIONS. NOT TO BE USED ON DOUBLE ARMED POLES WHERE A TANDEM TRANSPOSITION CAN BE MADE ON CROSSARM PINS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES TANDEM TRANSPOSITION (TYPE B-LIGHT DUTY)	
	Scale: NTS	February 19, 1962
		T-6

Figure 56

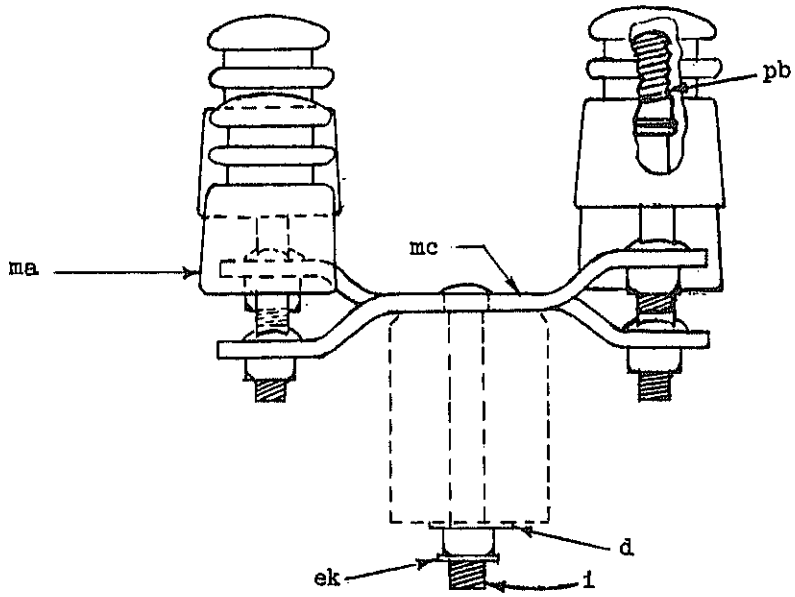


Note: Locust bushings must be used when bracket is mounted using hole drilled for wood pin.

USED AS A TANDEM TRANSPOSITION ON LINES IN NON-WINDY AREAS NOT REQUIRING POINT TYPE TRANSPOSITIONS, WHERE THE TRANSVERSE LOAD (CORNER PULL) IS 500 TO 1000 LBS. PER CONDUCTOR, PARTICULARLY ON LINES USING T-2 ASSEMBLY UNITS (STEEL PINS) AT NON-TRANSPOSED POINTS. CORNERS SHOULD NOT EXCEED 35 DEGREES AT POLES EQUIPPED WITH THIS UNIT. SEE FIGURE 58 AS TO REQUIREMENTS FOR POINT TRANSPOSITIONS. NOT DESIRABLE FOR DOUBLE ARMED POLES WHERE A TANDEM TRANSPOSITION CAN BE MADE ON CROSSARM PINS.

	RURAL TELEPHONE CONSTRUCTION PRACTICES TANDEM TRANSPOSITION (TYPE C-HEAVY DUTY)	
	Scale: NTS	February 19, 1962
		T-7

Figure 57



T-18 REINFORCED HEAVY DUTY BRACKET, USED FOR TRANSPOSITIONS ON 6A, 10A, AND 2B CROSSARMS IN WINDY AREAS IF ADJACENT SPANS EXCEED 200 FEET.

T-19 REINFORCED HEAVY DUTY BRACKET, USED FOR TRANSPOSITIONS ON 6B AND 10B CROSSARMS IN WINDY AREAS IF ADJACENT SPANS EXCEED 200 FEET.

T-18 AND T-19 BRACKETS ARE LIMITED IN USE ON CORNER POLE CROSSARMS FOR VARIOUS KINDS OF WIRE IN ACCORDANCE WITH THE FOLLOWING TABLE:

MAXIMUM CORNER ANGLES - DEGREES

Span Lengths Feet	All Types of Line Wire		
	Heavy	Medium	Light
300	50	60	60
400	40	60	60
500	35	60	60
600	30	50	60

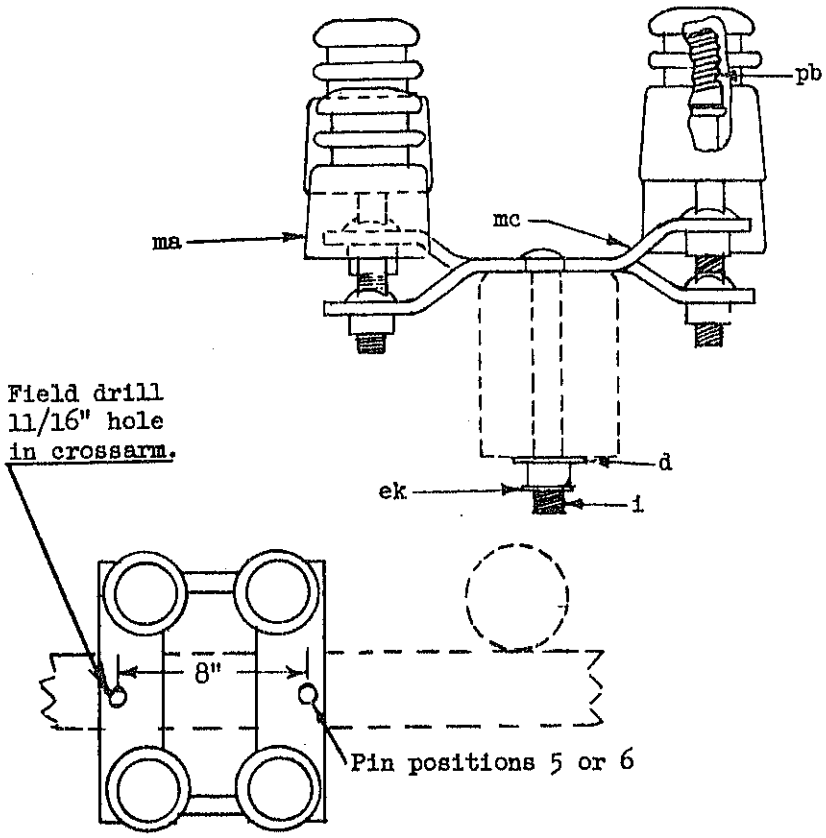
Note: Corners exceeding 60 degrees require buckarm construction

RURAL TELEPHONE CONSTRUCTION PRACTICES

REINFORCED HEAVY DUTY
POINT TRANSPOSITION BRACKETS

Scale: NTS		January 18, 1962
		T-18, T-19

Figure 58



Notes:

1. Bracket is equipped with integrally mounted insulator pins by manufacturers.
2. Plastic bushings must be installed on the insulator pins in the field before installing the glass insulators.
3. Locust bushings must be used when bracket is mounted using holes drilled for wood pins.
4. Both wires shall be placed in lower grooves of insulators.

USED ONLY FOR A POINT TRANSPOSITION ON A POLE PAIR ON 6A and 10A CROSSARM WHERE T-18 POINT TRANSPOSITION BRACKETS ARE USED ON NON-POLE PAIRS. LIMITATIONS: SAME AS FOR T-18 UNITS AS STATED ON FIGURE 58.

RURAL TELEPHONE CONSTRUCTION PRACTICES

REINFORCED HEAVY DUTY
POINT TRANSPOSITION BRACKET

Scale: NTS

January 18, 1962

T-20

Figure 59

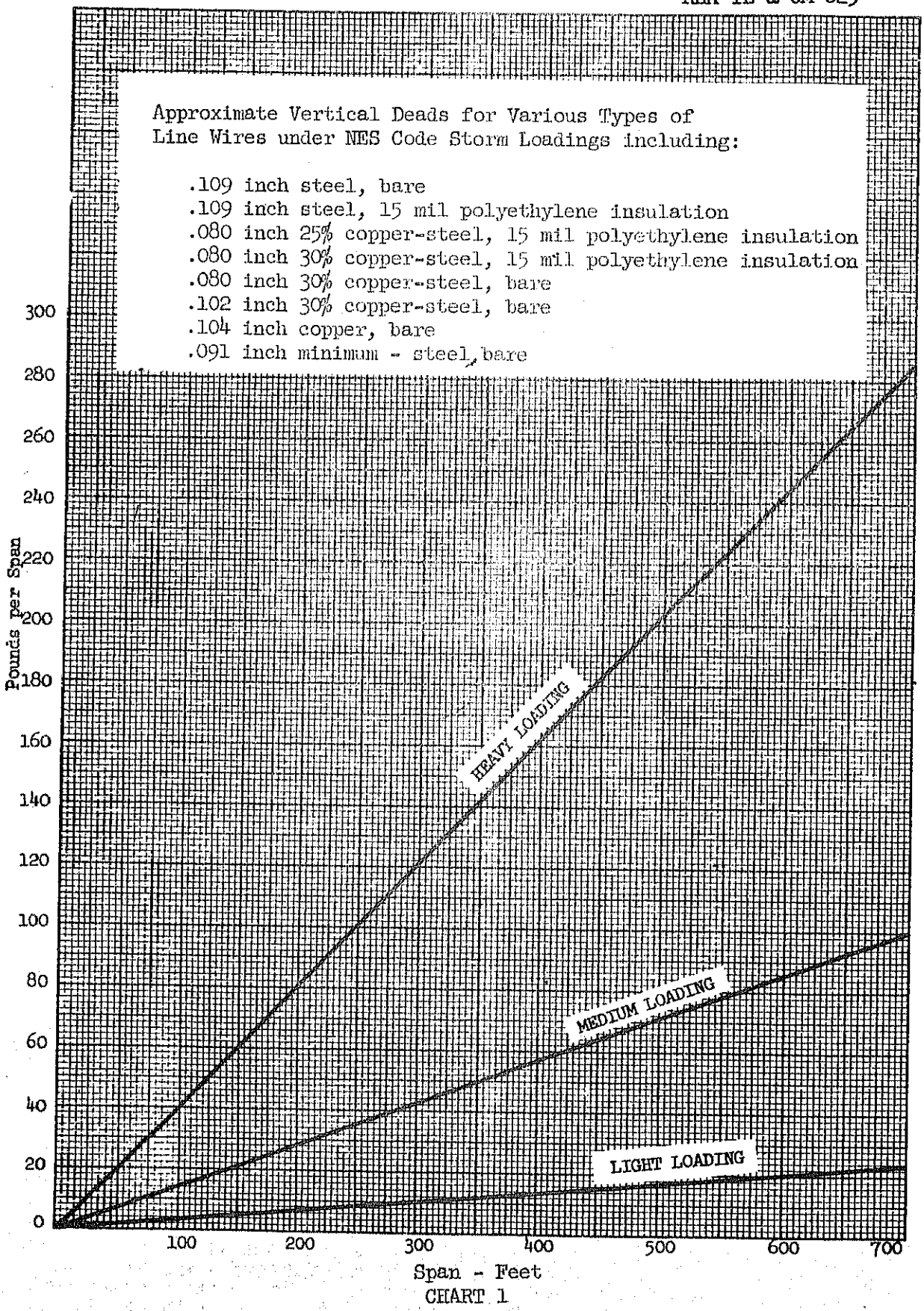

Approximate Vertical Deads for Various Types of
Line Wires under NES Code Storm Loadings including:
.109 inch steel, bare
.109 inch steel, 15 mil polyethylene insulation
.080 inch 25% copper-steel, 15 mil polyethylene insulation
.080 inch 30% copper-steel, 15 mil polyethylene insulation
.080 inch 30% copper-steel, bare
.102 inch 30% copper-steel, bare
.104 inch copper, bare
.091 inch minimum - steel, bare
Pounds per Span
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
HEAVY LOADING
MEDIUM LOADING
LIGHT LOADING
100
200
300
400
500
600
700
Span - Feet

CHART 1